

COUNTY BOROUGH OF ST. HELENS.



32ND

ANNUAL REPORT

OF THE

Medical Officer of Health.

1904.

St. Helens:

WESTWORTH & SONS, PRINTERS & STATIONERS, LOWE STREET,

—
1905.

HEALTH COMMITTEE.

NOVEMBER, 1904.

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Councillor H. B. BATES, L.S.A.

*To the Chairman and Members
of the Health Committee.*

GENTLEMEN,

I have the honour to present to you the Annual Report on the Health of the Borough for the year 1904.

The Report is divided into three parts, dealing with Vital Statistics, Records of Disease, and General Sanitary Administration.

The Death Rate in 1904 was greater than that of the preceding year, due largely to the prevalence of Measles and Epidemic Diarrhoea. The Death Rate in Hardshaw and North Eccleston Wards was very high, while that in Central was very low.

I have pleasure in reporting the excellent work done by the Staff during the year, and I have to acknowledge with thanks the kindness and assistance which I have on all occasions received from the members of the Committee.

I am, Gentlemen,

Your obedient Servant,

JOHN J. BUCHAN.

*Medical Officer's Department,
Town Hall, St. Helens.*

31st March, 1905.

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Appendix A.

Appendix B. (Local Government Board Tables).

I.

Vital Statistics.

SUMMARY FOR 1904.

POPULATION—Estimated to the middle of the year—

Males ...	45858	)	Total ...	88,722
Females ...	42864)		
Increase during the year ...	...	...	...	1,337

MARRIAGES 576

Annual Rate of Persons Married per 1000 of the Population ... 12.98

BIRTHS Males ... 1,692) Total ... 3,321
Females ... 1,629)

Annual Rate of Births per 1000 of Population 37.4

DEATHS Males ... 960) Total ... 1,859
Females ... 899)

Annual Rate of Mortality (Males ... 20.9) Total ... 20.9
per 1000 (Females 20.9)

Total Deaths from Zymotic Diseases 352

Annual Rate of Mortality from Zymotic Diseases 3.96

Infantile Mortality Rate, 1904 174

VITAL STATISTICS.



The area of the Borough is 7,285 acres. The altitude varies from 75 feet above the ordnance datum at Blackbrook to 268 at Brown Edge. The town stands for the most part on the coal measures, but the Bunter new red sandstone, the Permian sandstone, peat and alluvium appear in places.

POPULATION.

The population of the Borough at the middle of 1904 calculated upon the census returns, was 88,722, being an increase of 1,337 over that of last year. The population at the Census of 1901 was 84,410, and at the census of 1891 72,413.

The number of inhabited houses at the end of last year was found to be 17,690. This gives an inhabited house rate of 5.16 persons per house.

The average density of population is 12.1 persons to the acre ; the density varies in different wards from 4.1 in West Sutton to 127.9 in South Windle. This is seen in the following table :—

DISTRIBUTION AND DENSITY OF POPULATION.

WARDS.	Population Census 1901.	Population estimated to June 30, 1904.	Area of each Ward.	Persons per Acre, 1904.
Eccleston, North	10551	11180	235.439	47.6
Eccleston, South	8835	9542	621.625	15.4
Central	7235	7350	94.459	78.2
Windle, North	11475	12184	697.084	17.5
Windle, South	8315	8570	67.116	127.9
Hardshaw	9690	10052	342.684	29.4
Sutton, East	8771	9112	1312.319	6.9
Sutton, West	9524*	10132*	2429.151	4.1
Parr	10014	10600	1484.550	7.1
Whole Borough	84410	88722	7284.427	12.1

* Including 936 in Rainhill Asylum.

The proportion of young lives in the population as is seen on Table V, page 85, is very great. In St. Helens 14.3 per cent. of the persons living are under five years of age, while in England and Wales generally only 11.4 per cent. are under that age. This peculiarity in the population of the Borough is of great importance in considering its statistics, as the general mortality rate will be affected much more by a prevalence of disease among infants and children than by a prevalence among adults.

Increase of Population.—The increase in the population of 1904 over that of 1903 is 1,337. The natural increase for the year under consideration, or the excess of the number of births over that of the deaths is 1,533. If this be interpreted it means that during the year 1904 there was a nett emigration from St. Helens of 196 persons. Regarding the census returns from 1881 it is apparent that the nett result of the fluctuation of the population in the intercensal period 1881-1891 was an immigration of 1,774 persons into the town, while the nett result in the intercensal period 1891-1901 was an emigration from the town of 1,013 persons. This can be seen from the following table:—

Year.	Population.	Actual Increase.	Natural Increase.	Increase due to Immigration.	Decrease due to emigration.
Census 1881	58308	—	—	—	—
Census 1891	71288	12980	11206	1774	—
Census 1901	84410	13122	14135	—	1013

It is clear then that during the past 20 years, so far as immigration and emigration are concerned, St. Helens has been practically stationary, and that the large increase of population which has taken place is dependent wholly on the high birth rate.

BIRTHS.

The number of Births registered during 1904 was 3,321. This number is 100 below that registered in 1903, The birth-rate, therefore is 37.42 per 1000 of the population.

In the following Table will be found the number of births registered in each quarter of the year from 1894, with the birth rate for each year:—

YEAR.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Totals.	Rate per 1000 per year.
1894	781	716	653	732	2882	37.0
1895	884	796	775	710	3165	32.8
1896	777	783	714	768	3042	37.4
1897	823	769	813	788	3193	38.5
1898	896	776	767	823	3262	38.4
1899	802	762	763	788	3115	35.9
1900	886	743	768	701	3098	35.0
1901	815	765	792	756	3128	36.9
1902	848	798	801	775	3222	37.4
1903	819	845	819	938	3421	39.1
Mean of } 10 years } ...	833	775	766	777	3152	36.8
1904	Males...	400	446	408	438	1692
	Females	424	402	380	423	1629
1904	Total ...	824	848	788	861	3321
	Rate per 1000	37.1	38.2	35.5	38.8	

It will be observed that during 1904, the highest birth-rate was registered in the 4th Quarter.

The birth rate in St. Helens is much above that of England and Wales

or of the Great Towns generally. Of the 76 Great Towns, only Rhondda and Merthyr Tydfil have a higher birth rate than St. Helens. (See Table B, page 19).

The following table gives the birth rate for each year from 1894 in England and Wales, the Great Towns, and St. Helens:—

YEAR.	BIRTH RATES.		
	England and Wales.	Great Towns.	St. Helens.
1894	29·6	30·7	37·0
1895	30·3	31·3	39·8
1896	29·7	30·7	37·4
1897	29·6	30·7	38·5
1898	29·4	30·3	38·4
1899	29·3	30·1	35·9
1900	28·9	29·4	35·0
1901	28·5	30·0	36·9
1902	28·6	30·0	37·4
1903	28·4	27·4	39·1
Means	29·2	30·0	37·5
1904	27·9	29·07	37·4

It will be seen, therefore, that the birth rate for England and Wales during 1904 was 1·9 below the average for the previous ten years while that for St. Helens was 0·1 below the average for the same period.

Of the 3,321 children born during 1904, 1,692 were males and 1,629 were females, this being in the proportion of 100 males to 96·2 females.

Illegitimacy.—St. Helens has always had a comparatively low rate of illegitimacy, and this record is still maintained.

Of the 3,321 births registered during 1904, 76 were illegitimate. This is in the proportion of 977 legitimate and 23 illegitimate births in every 1,000. It is unfortunate, however, that proper corrections cannot be made for the births occurring in the Workhouse at Whiston.

The following table shows the proportional amount of illegitimacy per 1,000 births in past years :—

Year.	Legitimate.	Illegitimate.
1894	969	31
1895	975	25
1896	972	28
1897	977	23
1898	972	28
1899	978	22
1900	978	22
1901	976	24
1902	977	23
1903	978	22
1904	977	23

DEATHS.

The deaths of 1,788 persons took place during 1904 within the Borough of St. Helens. Of these 924 were males and 864 females.

For comparative purposes certain corrections for deaths in Public Institutions have to be applied as follows :—

DEATHS IN PUBLIC INSTITUTIONS.

(a) *In the Borough of St. Helens.*

Name of Institution.	Total Deaths.	Deaths of Patients from St. Helens.
Borough Sanatorium ...	24	20
County Asylum (old) ...	62	3
Providence Hospital ...	38	37
St. Helens Hospital ...	36	34
Total ...	160	94

(b) *Outside the Borough of St. Helens.* The following deaths of persons belonging to St. Helens occurred in Public Institutions outside the Borough :— Whiston Workhouse, 116; County Asylum (new), 2; Old Wint Hospital, Haydock, 3; Liverpool Hospitals, 16; Total, 137.

There thus falls to be subtracted the deaths of 66 persons who died within the Borough, but whose residence was elsewhere, and to be added the deaths of 137 persons whose residence was in St. Helens, but whose death occurred outside the Borough. The total number of deaths is therefore 1859, giving a death rate of 20.9 per thousand of the population. This rate

is 3·0 per 1,000 above the rate in the preceding year, and 1·7 per 1,000 below the mean rate in St. Helens for the preceding 10 years.

In England and Wales the death rate for 1904 was 16·2 per 1,000, being 0·8 above the rate for 1903, and 1·0 below the mean rate for the preceding 10 years.

In making a comparison between these death rates it is necessary to allow for the difference in the age and sex constitution of the populations. This, as explained in previous reports, may be done by multiplying the death rate of St. Helens by a "factor of correction," allowing for this difference. The Registrar-General gives this factor as 1·0839, which, when applied, gives a corrected death rate of 22·6 per 1,000 in St. Helens. The comparative mortality figure for 1904 is therefore 1395; this means that a population living in England and Wales generally, which in 1904 would have given 1,000 deaths, would, if living in St. Helens alone, have given 1395 deaths.

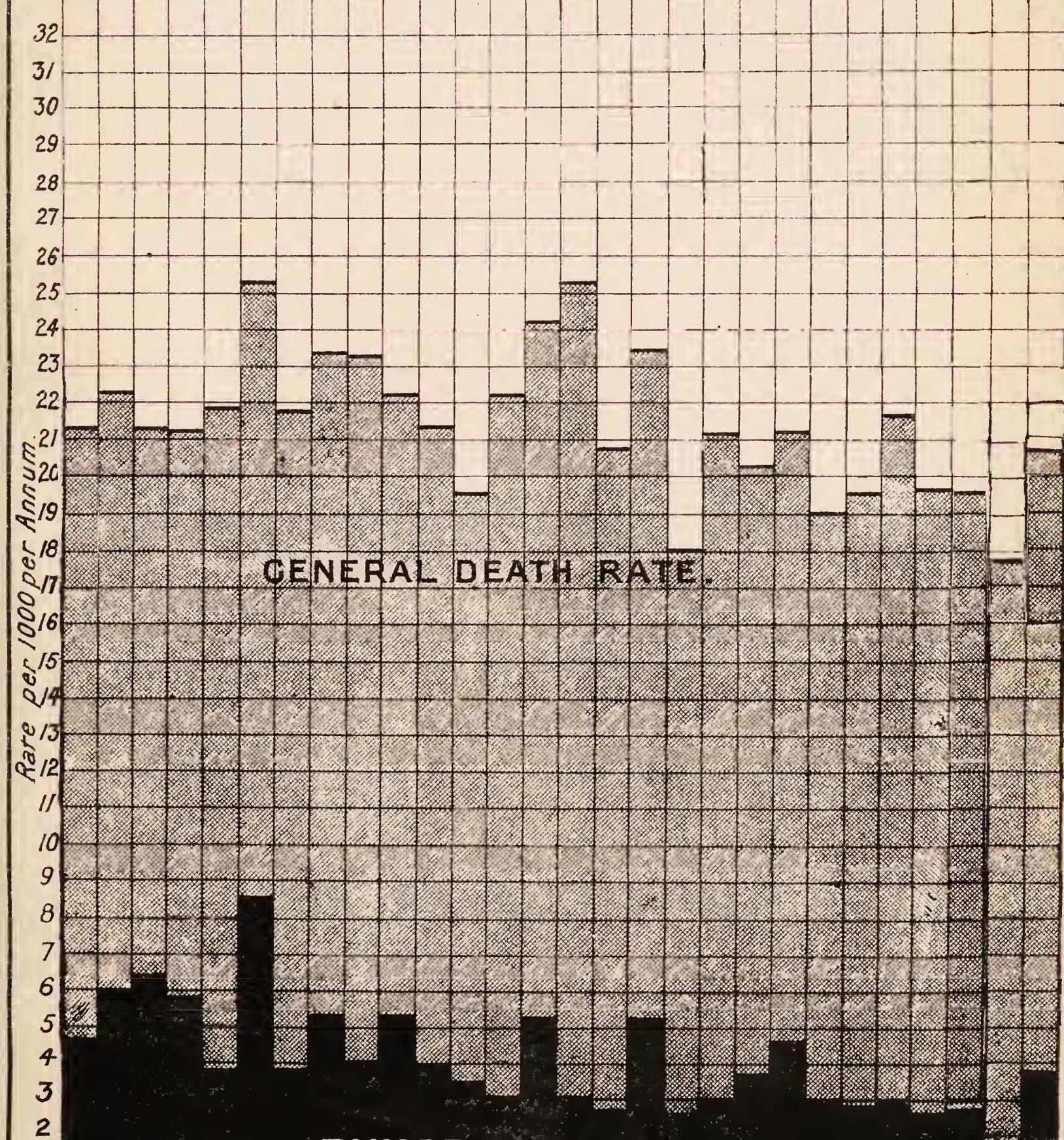
On pages 19 and 20 will be found the death rates for the other great towns in England and Wales during 1904, when it will be seen that only 5 towns have a higher death rate than St. Helens.

The death rate for St. Helens is therefore high, and without at present considering in detail the mortality in relation to disease, the following table is submitted to show the deaths from the principal disease groups in 1904 and in the preceding ten years:—

		1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
Zymotic diseases	.. ..	191	276	326	388	285	278	319	245	243	166	372
Parasitic diseases	.. ..	2	2	2	5	2	—	3	1	—	—	2
Dietic diseases	.. .. ..	—	4	2	7	5	4	7	7	1	10	3
Constitutional diseases	.. ..	216	241	230	234	219	222	264	209	265	232	253
Developmental	,,	74	122	96	101	114	99	125	123	143	125	139
Diseases of Nervous System		180	182	197	182	210	217	237	181	211	211	165
,, „ Respiratory „	Local Diseases.	302	344	356	375	332	379	439	326	142	364	370
,, „ Circulatory „		74	88	77	71	73	90	100	94	82	89	106
,, „ Digestive „		116	146	150	148	154	157	176	192	135	113	167
Other local diseases	..	38	47	39	51	43	52	54	54	55	67	48
Deaths from violence	.. ..	65	53	61	48	56	55	52	65	56	68	50
Ill-defined diseases	.. ..	142	169	132	136	148	147	138	150	109	90	113
All causes	.. ..	1400	1674	1668	1746	1641	1700	1914	1675	1702	1535	1788

CHART NO. 1.

YEARS	BIRTH RATE	RAINFALL in inches	MEAN TEMP. AIR	HIGHEST TEMP. SHADE	CHIEF ZYMIOTICS
77	44.33	41.7	48.3	79.0	
78	43.21	35.5	48.5	85.0	<i>Diarrhea</i>
79	41.13	24.3	45.5	75.9	<i>Measles</i>
80	41.56	29.7	48.2	82.4	
81	43.52	36.7	46.9	84.2	
82	43.70	39.7	48.5	71.4	<i>Measles</i>
83	40.69	34.8	48.0	74.9	
84	42.50	26.9	49.2	84.9	<i>Measles</i> <i>Diarrhea</i>
85	86	39.93	32.7	46.9	76.6
86	40.70	33.0	47.3	77.1	<i>Diarrhea</i>
87	87	37.00	21.1	47.0	82.9
88	88	39.20	28.1	46.7	82.3
89	89	39.86	25.8	47.8	78.0
90	90	38.90	27.0	47.8	76.6
91	91	40.70	32.3	47.2	78.9
92	92	39.77	34.8	46.6	78.9
93	93	40.10	25.7	50.1	<i>Measles & Diarrhea</i>
94	94	37.09	33.3	48.9	81.0
95	95	39.80	28.0	47.2	80.2
96	96	37.49	30.0	48.5	84.2
97	97	38.51	33.6	48.7	84.4
98	98	38.49	27.1	49.7	79.9
99	99	35.97	30.5	49.1	<i>Scarlet Fever</i> <i>Diarrhea</i>
00	00	35.01	33.0	49.1	<i>Measles & Diarrhea</i>
01	01	36.92	26.6	48.5	88.0
02	02	37.44	31.9	47.6	81.2
03	03	39.14	45.6	48.9	80.0
04					<i>Measles & Diarrhea</i>



ZYMOTIC RATE

FOR 28 YEARS.

It will be noticed that the increase in the number of deaths is almost confined to the zymotic group of diseases and to diseases of the digestive system; a slight increase has also taken place in circulatory diseases.

On page 18 will be found the recorded death rates for St. Helens during 30 years.

The death rate, the factor of correction, corrected death rate and comparative mortality figure for each of the different wards in the Borough for 1904, are shown in the following table:—

WARDS.	Death-rate.	Factor of Correction.	Corrected Death Rate.	Comparative Mortality figure.
North Eccleston	26·8	1·0556	28·2	1740
South Eccleston	17·2	1·0737	18·4	1135
Central	11·8	1·1331	13·3	821
North Windle ...	17·2	1·1310	19·4	1197
South Windle ...	19·2	1·0957	21·0	1297
Hardshaw ...	25·8	1·1009	28·4	1753
Sutton, East ...	19·7	1·0693	21·0	1296
Sutton, West ...	18·7	1·0630	19·8	1222
Parr	20·4	1·0489	21·3	1314

The death rates in Hardshaw and North Eccleston, are unfortunately again the highest. The low death rate in the Central ward is remarkable.

The death-rate in the first quarter of the year was 21·3, in the second 18·2, in the third 23·6. and in the fourth quarter 20·5 per 1,000; the rate was therefore greatest in the third quarter of the year.

The death-rate was the same among the male and female population.

Mortality at Different Ages.—The death rates at each age group during the past 6 years are seen in the following table. It will be noticed that the increase in the death rate has fallen wholly on the earlier years of life; under 5 years the death rate is 22.3 per 1,000 greater than in 1903, while over 5 years the death rate is 0.7 per 1,000 less than that in 1903.

AGES.	Death Rate per 1,000 of the Population at each age Group.					
	1899	1900	1901	1902	1903	1904
Under 1 year ...	168.9	196.2	192.9	203.3	175.7	210.4
1 to 2 years ...	71.8	78.5	67.1	69.9	53.6	97.1
2 „ 3 „ ...	22.3	22.9	28.3	25.9	21.1	37.9
3 „ 4 „ ...	15.1	15.1	10.5	14.5	13.1	23.7
4 „ 5 „ ...	6.6	10.2	11.9	11.3	8.7	12.6
5 „ 10 „ ...	3.5	4.6	5.0	5.3	5.9	4.2
10 „ 15 „ ...	2.8	2.1	2.8	2.5	2.5	2.6
15 „ 20 „ ...	2.9	4.0	3.5	3.4	3.4	3.2
20 „ 25 „ ...	5.2	6.1	6.3	5.5	3.3	3.8
25 „ 35 „ ...	8.7	9.6	7.8	6.9	6.8	5.1
35 „ 45 „ ...	15.8	14.5	13.7	13.6	10.5	10.4
45 „ 55 „ ...	24.3	26.9	21.0	20.5	20.9	18.3
55 „ 65 „ ...	41.2	46.5	38.0	40.5	37.6	35.0
65 „ 75 „ ...	96.8	96.7	70.8	79.1	69.9	77.6
75 „ 85 „ ...	117.0	137.6	154.8	144.0	160.7	165.7
Upwards of 85 years.	269.2	285.7	74.0	281.2	312.5	312.5
All under 5 years ...	60.7	69.0	66.4	68.0	57.0	79.3
All over 5 years ...	12.3	13.2	11.5	11.7	10.9	10.2
All ages ...	19.6	21.6	19.7	19.7	17.5	20.9

Infantile Mortality Rate.—The Infantile mortality rate in 1904 was 174 per 1,000 births; the rates for past years are shown in the following table, which compares them with the corresponding rates in the Great Towns, and in England and Wales generally:—

YEAR.	INFANTILE MORTALITY RATE.		
	England and Wales.	Great Towns.	St. Helens.
1894	137	152	161
1895	161	182	181
1896	148	168	177
1897	156	176	181
1898	160	178	172
1899	163	182	157
1900	154	172	188
1901	151	168	175
1902	133	144	167
1903	132	144	138
Average of 10 yrs.	149	166	169
1904	146	160	174

It will be seen that the infantile mortality is 36 per 1000 above that for last year and 5 per 1000 above the mean for the past ten years. Had the rate for 1903 been maintained, it would have meant a gain of 120 lives to the town. Reference to Table B, page 19, will show that 22 of the Great Towns had a higher infantile mortality rate than St. Helens. Having regard to the high birth rate of St. Helens this can be considered comparatively satisfactory, but it is nevertheless capable of great improvement.

In analysing the causes of deaths in children under one year of age it will be seen from the following table that diarrhoea, digestive diseases and measles have been the principal causes of the increased infantile mortality rate.

DEATH RATES PER 1000 LIVING UNDER 1 YEAR.

DISEASE.	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
Measles ..	2.68	3.36	2.56	8.61	7.70	1.37	4.37	3.35	6.38	0.00	9.10
Whooping Cough ..	9.95	1.87	12.44	2.51	3.51	5.15	8.40	1.05	3.38	6.28	4.73
Diarrhoea ..	11.49	23.18	16.83	30.51	31.59	21.29	22.51	27.01	11.27	12.94	29.48
Other Zymotics ..	.76	1.12	5.29	1.76	2.10	1.34	1.7	1.40	1.12	2.58	.72
<i>All Zymotics</i> ..	25.08	29.53	35.12	43.42	37.90	28.15	36.98	29.82	22.17	21.82	44.04
Tabes Mesenterica ..	3.83	5.23	6.58	8.25	5.26	3.09	6.05	7.01	7.14	4.07	5.82
Other Tubercular Dis.	2.68	3.74	3.66	5.02	3.86	4.12	3.02	3.85	4.88	4.40	8.00
<i>All Tubercular Dis.</i> ..	6.51	8.97	10.24	13.27	9.12	7.21	9.07	10.87	12.02	8.50	13.83
Premature Birth ..	16.47	28.05	21.59	16.87	23.51	18.54	19.82	23.50	33.07	25.89	24.75
Nervous System ..	22.21	25.80	21.96	23.33	19.65	18.20	24.86	21.40	24.80	25.52	21.84
Respiratory System ..	35.94	39.64	34.77	34.10	35.45	24.38	29.23	28.07	47.35	38.10	32.76
Digestive System ..	11.49	19.82	10.24	5.74	15.44	6.52	9.74	5.26	12.02	9.98	28.75
Enteritis ..	12.64	8.60	15.00	20.46	11.82	17.51	21.17	22.10	9.77	6.65	10.92
Debility ..	25.66	30.66	25.25	25.48	23.16	25.06	20.82	23.85	22.17	19.97	24.02
Marasmus ..	12.64	15.33	10.98	12.56	18.60	15.79	16.12	18.24	12.40	7.76	10.92
Other Causes ..	9.57	11.96	12.81	12.20	5.96	7.55	6.05	9.82	7.51	11.46	9.71
Total Mortality ..	178.47	215.42	198.00	207.50	198.66	168.95	196.2	192.98	203.3	175.7	210.4

It will be noticed that the death rates among infants from the zymotic diseases, and the digestive and tubercular diseases, are greater than in any year since 1893 ; that the rates from enteritis, debility, and marasmus show an increase over those of 1903, while the rates from premature birth and nervous and respiratory diseases show a decrease.

Between 1 and Sixty Years of Age.—The mortality rate per 1000 living between the ages of 1 and 60 years in 1904 was 11.6, as against 9.5 in 1903. This rate in England and Wales in 1904 was 7.4 per 1000, and 7.7 in 1903 ; in the Great Towns the rate was 8.9 in 1904, and 8.6 in 1903. In this age group the death rate is also increased, but as already pointed out, this increase occurred in the early years of life, and is due especially to measles.

Over 60 years of Age.—The mortality rate per 1000 living over 60 years of age in 1904 was 79.9 as against 78.7 in 1903. This rate in England and Wales in 1904 was 68.2 per 1000 and in 1903, 64.2 ; in the Great Towns the rate in 1904 was 72.0 and in 1903, 66.5. There is a slight increase in this age group for St. Helens in 1904.

Table A.—Vital and Mortal Statistics for St. Helens during 30 years.

YEARS.	Population.	Birth Rate.	Death Rate.	Zymotic Death Rate.	DEATHS FROM							
					Small Pox.	Measles.	Scarlet Fever.	Typhoid and Continued Fever.	Typhus Fever.	Diarrhea.	Whooping Cough.	Diphtheria.
1875	49970	45.42	24.69	5.3	0	4	77	65	1	101	31	10
1876	51190	45.60	23.28	5.1	0	102	21	40	1	86	7	15
1877	52430	44.33	22.84	3.2	0	2	12	34	1	74	48	11
1878	53700	46.21	23.99	4.2	0	4	22	40	0	132	15	20
1879	55010	41.13	22.40	5.7	0	143	83	34	2	52	2	3
1880	56340	41.56	20.05	4.6	0	0	27	40	2	130	71	1
1881	57711	43.52	21.69	2.92	0	14	28	56	0	76	3	3
1882	58972	43.70	25.46	7.4	0	250	36	33	1	85	36	6
1883	60263	40.69	21.65	2.5	0	3	14	31	1	69	24	11
1884	61584	42.50	24.16	5.3	0	131	16	33	2	131	9	11
1885	62932	39.93	23.32	3.5	0	81	13	7	1	56	53	11
1886	64311	40.70	22.46	5.2	0	102	34	28	0	122	41	10
1887	65718	37.00	21.69	3.9	0	53	35	34	0	101	28	11
1888	67158	39.20	19.80	3.1	0	38	11	22	0	65	61	21
1889	68628	39.86	23.50	4.18	0	78	3	81	1	85	15	29
1890	70132	38.90	25.43	5.3	0	19	181	24	1	74	68	13
1891	71666	40.70	26.02	3.0	0	54	24	26	0	78	29	9
1892	73240	39.77	20.55	2.64	1	23	18	25	0	84	31	12
1893	*75390	40.10	23.46	5.3	5	135	6	52	0	168	19	16
1894	*77690	37.09	18.02	2.21	0	21	14	26	2	38	61	10
1895	*79400	39.8	21.08	3.08	1	54	9	59	0	101	14	8
1896	*81136	37.49	20.24	3.63	0	38	59	40	0	63	78	17
1897	*82910	38.51	21.0	4.22	0	87	44	33	0	133	33	20
1898	*84730	38.49	19.3	3.09	0	17	24	30	0	140	34	16
1899	*86588	35.97	19.6	2.74	0	21	8	43	0	114	41	15
1900	*88480	35.0	21.6	3.04	0	59	25	19	0	91	56	19
1901	*84734	36.9	19.7	2.56	0	7	29	34	0	95	17	33
1902	*86040	37.4	19.7	2.60	0	59	52	25	0	50	18	20
1903	*87385	39.1	17.5	1.72	0	1	26	18	0	53	30	23
1904	*88722	37.4	20.9	3.96	3	131	17	13	—	120	49	22

* These figures include Population in Area added 1894.

TABLE B.

TABLE SHOWING COMPARATIVE STATISTICS BETWEEN
ST. HELENS AND THE 75 OTHER GREAT TOWNS DURING 1904.

TOWN.	Population	Birth Rate per 1000	Death Rate per 1000	Infantile Rate per 1000 Births	Zymotic Rate per 1000
76 Great Towns ..	15,271,287	29.1	17.2	160	2.49
London	4,649,088	28.0	16.1	144	2.15
Croydon	144,419	26.0	13.8	129	1.42
Willesden	132566,	32.8	12.2	115	1.61
Hornsey	81,221	20.4	8.4	87	.90
Tottenham	112,981	31.8	13.9	139	2.15
West Ham	288,424	32.3	16.4	165	3.43
East Ham	116,902	31.7	13.5	140	3.13
Leyton	110,844	28.7	12.7	142	2.56
Walthamstow	111,282	32.5	11.9	135	2.87
Hastings	66,503	17.4	13.1	107	.39
Brighton	126,286	23.5	16.6	134	1.63
Portsmouth	198,038	28.3	16.9	141	2.12
Bournemouth	64,645	17.1	13.6	110	.60
Southampton	112,500	26.8	13.7	114	1.08
Reading	76,373	25.8	13.8	133	1.81
Northampton	91,146	23.1	13.8	133	1.59
Ipswich	69,805	27.6	15.5	146	1.55
Great Yarmouth ..	52,099	27.8	17.0	165	2.51
Norwich	115,538	27.6	18.2	179	2.80
Plymouth	114,003	25.4	18.5	173	2.54
Devonport	75,334	28.7	13.4	115	1.24
Bristol	343,204	26.0	15.6	133	1.63
Hanley	63,932	33.7	21.2	206	4.11
Burton-on-Trent ..	51,934	26.0	15.0	118	1.32
Wolverhampton ..	98,194	29.9	14.6	152	2.71
Walsall	91,432	32.9	17.8	176	3.22
Handsworth (Staffs). ..	59,634	23.9	11.8	134	1.34
West Bromwich ..	67,186	33.5	15.9	149	1.91
Birmingham	537,965	31.5	19.3	195	3.42
Kings Norton	66,667	28.3	11.0	102	.78
Smethwick	60,691	32.0	12.4	143	1.23
Aston Manor	80,363	29.0	15.0	184	2.98
Coventry	73,904	31.4	15.3	137	1.70
Leicester	224,186	26.67	14.5	163	1.98
Grimsby	66,958	29.2	16.2	185	3.45
Nottingham	248,811	27.8	17.7	175	2.59
Derby	120,449	27.3	15.3	143	1.40

TABLE B (Continued)

TOWN.		Population	Birth Rate per 1000	Death Rate per 1000	Infantile Rate per 1000 Births	Zymotic Rate per 1000
Stockport	..	97,008	26.5	19.9	201	3.06
Birkenhead	..	114,814	33.1	19.6	180	3.70
Wallasey	..	60,354	29.4	16.0	157	2.69
Liverpool	..	723,430	33.7	21.9	196	4.65
Bootle	..	61,755	30.9	18.6	180	4.16
Wigan	..	62,800	34.5	21.5	188	2.90
Warrington	..	67,331	32.7	19.4	171	4.57
Bolton	..	175,744	26.9	16.9	167	3.08
Bury	..	58,450	23.6	17.1	163	2.33
Manchester	..	557,938	31.2	21.3	187	3.10
Salford	..	228,983	31.7	21.1	193	4.36
Oldham	..	139,497	24.9	18.2	155	2.32
Rochdale	..	85,601	22.8	17.7	151	2.03
Burnley	..	100,569	26.4	19.5	228	3.92
Blackburn	..	132,134	23.4	17.2	191	2.10
Preston	..	115,055	28.1	17.8	183	2.92
Barrow	..	59,654	27.9	12.0	122	1.34
Huddersfield	..	94,925	23.7	17.5	136	1.90
Halifax	..	107,580	20.1	15.5	130	1.51
Bradford	..	285,089	22.05	16.9	166	2.42
Leeds	..	450,142	28.9	17.9	176	2.57
Sheffield	..	432,940	32.0	16.8	158	2.2
Rotherham	..	58,498	33.0	15.8	164	2.38
York	..	81,268	28.1	16.2	170	3.33
Hull	..	253,865	30.8	18.0	181	3.52
Middlesborough	..	96,684	37.1	19.8	170	2.78
Stockton-on-Tees	..	52,192	31.8	17.5	149	2.57
West Hartlepool	..	69,251	33.0	16.3	134	1.97
Sunderland	..	151,157	34.4	19.4	165	2.34
South Shields	..	107,334	34.5	18.1	144	1.75
Gateshead	..	118,067	34.4	18.5	175	2.87
Newcastle-on-Tyne	..	225,362	30.5	19.8	156	1.78
Tynemouth	..	53,060	34.9	19.4	152	1.94
Newport (Mon.)	..	71,543	32.7	15.7	149	1.58
Cardiff	..	176,313	29.5	15.2	144	1.79
Rhondda	..	122,310	39.7	19.1	190	3.77
Merthyr Tydfil	..	72,745	38.5	19.7	186	2.54
Swansea	..	95,931	30.5	17.7	172	2.23
St. Helens	..	88,722	37.4	20.9	174	3.96

TABLE C.

WEEKLY RETURNS OF BIRTHS AND DEATHS FOR 1904.

1904.		Deaths from all causes.	Annual Rate per 1000.	Deaths from seven principal Zymotics.	Annual Rate per 1000, for Zymotics.	Births.	Annual Rate per 1000.
Week ending January	12	35	20.8	3	1.7	83	49.3
," "	9	32	19.6	1	.58	62	36.8
," "	16	30	17.5	0	—	58	33.9
," "	23	31	18.1	3	1.7	62	36.2
," "	30	36	21.0	5	2.9	82	47.9
," February	6	24	14.0	2	1.1	66	38.6
," "	13	26	15.2	1	.58	59	34.5
," "	20	25	20.4	6	3.5	66	38.6
," "	27	45	26.3	0	—	67	39.1
," March	5	44	25.7	3	1.7	45	26.3
," "	12	34	19.8	7	4.0	69	40.3
," "	19	40	23.4	11	6.1	66	38.6
," "	26	38	22.2	12	7.0	59	34.5
," April	2	40	23.4	11	6.4	63	36.8
," "	9	36	21.0	8	4.6	62	36.2
," "	16	36	21.0	7	4.0	60	35.1
," "	23	38	22.2	12	7.0	65	38.0
," "	30	30	17.5	4	2.3	54	31.5
," May	7	42	24.5	9	5.2	63	36.8
," "	14	21	12.2	1	.58	70	40.9
," "	21	29	16.9	3	1.7	69	40.3
," "	28	29	16.9	3	1.7	49	28.6
," June	4	25	14.6	4	2.3	66	38.6
," "	11	26	15.2	2	1.1	79	46.2
," "	18	35	20.4	7	4.0	66	38.6
," "	25	24	14.0	8	4.6	74	43.2
," July	2	22	12.8	4	2.3	70	40.9
," "	9	24	14.0	6	3.5	73	42.7
," "	16	29	16.9	5	2.9	40	23.4
," "	23	32	18.7	8	4.6	60	35.1
," "	30	46	26.9	16	9.3	48	28.0
," August	6	57	33.3	22	12.8	51	29.8
," "	13	22	25.1	14	8.1	76	44.4
," "	20	53	31.0	19	11.1	67	39.1
," "	27	44	25.7	20	11.7	50	29.2
," September	3	33	19.3	14	8.1	67	39.1
," "	10	44	25.7	12	7.0	67	39.1
," "	17	31	18.1	6	3.5	50	29.2
," "	24	29	16.9	5	2.9	77	45.0
," October	1	41	23.9	3	1.7	62	36.2
," "	8	29	16.9	4	2.3	84	49.1
," "	15	26	15.2	8	4.6	57	33.3
," "	22	20	11.7	1	.58	67	39.1
," "	29	31	18.1	2	1.1	64	37.4
," November	5	34	19.8	3	1.7	79	46.2
," "	12	33	19.3	4	2.3	61	35.6
," "	19	37	21.6	7	4.0	64	37.4
," "	26	38	22.2	9	5.2	58	33.9
," December	3	49	28.6	6	3.5	48	28.0
," "	10	33	19.3	4	2.3	76	44.4
," "	17	25	14.6	4	2.3	84	49.1
," "	24	36	21.0	9	5.2	64	37.4
," "	31	43	25.1	8	4.6	55	32.1

II.

Records of Disease.

THE ZYMOTIC DISEASES.

The principal Zymotic Diseases recognised in this country are Small-pox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Typhus Fever, Typhoid Fever, and Epidemic Diarrhoea.

The total deaths from these diseases in 1904 was 352, giving a mortality rate for this group of 3.96 per 1,000. In England and Wales the rate was 1.93 per 1,000.

The zymotic death rate in St. Helens for 1904 is higher than that of any year since 1897, and the increase, amounting to 2.24 per 1,000 of the population over that of the preceding year is due mainly to the number of deaths occurring from Measles and Epidemic Diarrhoea. This is seen in the following Table, which compares the Zymotic death rates during the past six years :—

MORTALITY RATES PER 1,000 SINCE 1899.

	1899	1900	1901	1902	1903	1904
Small Pox ..	0.00	0.00	0.00	0.00	0.00	0.03
Measles ..	0.24	0.66	0.07	0.68	0.01	1.47
Scarlet Fever ..	0.09	0.28	0.34	0.60	0.29	0.17
Diphtheria ..	1.07	0.21	0.38	0.23	0.26	0.24
Whooping Cough ..	0.47	0.63	0.20	0.20	0.34	0.55
“ Fever ” ..	0.49	0.21	0.40	0.29	0.20	0.12
Diarrhoea ..	1.31	1.02	1.41	0.58	0.60	1.35
	2.79	3.04	2.56	2.60	1.72	3.96

The increase in the death rate from Zymotic diseases may be regarded as a temporary fluctuation, as the mean rates for longer periods show a continuous fall in recent years; thus the mean rate for the five years 1874-78 was 5.4 per 1,000, and for each of the succeeding five years it was 4.6; 4.2; 4.0; 3.2; and 2.5 per 1,000 respectively, as is seen in the following table :—

ZYMOTIC DEATH RATE SINCE 1874.

Year.	Rate.	Year.	Rate.	Year.	Rate.	Year.	Rate.	Year.	Rate.	Year.	Rate.
1874	9.2	1879	5.7	1884	5.3	1889	4.1	1894	2.2	1899	2.7
1875	5.3	1880	4.6	1885	3.5	1890	5.3	1895	3.0	1900	3.0
1876	5.1	1881	2.9	1886	5.2	1891	3.0	1896	3.6	1901	2.5
1877	3.2	1882	7.4	1887	3.9	1892	2.6	1897	4.2	1902	2.6
1878	4.2	1883	2.5	1888	3.1	1893	5.3	1898	3.0	1903	1.7
Mean	5.4		4.6		4.2		4.0		3.2		2.5

1904 3.96.

On pages 19 and 20, will be found the Zymotic rates for the past year in the great towns in England and Wales, where it will be seen that in only 8 towns was there a higher rate.

The Zymotic death rate in the first quarter of the year was 2.92; in the second 3.24; in the third 6.76; and in the last quarter 3.11 per 1,000 of the population. It was therefore greatest in the third quarter.

In Table VII, page 88, will be found certain details regarding the deaths from Zymotic diseases with reference to age and locality.

The diseases to be notified under the Infectious Disease Notification Act, 1889, are small-pox, cholera, diphtheria, membranous croup, erysipelas, scarlet fever, and the fevers known by any of the following names:—typhus, typhoid, enteric, relapsing, continued or puerperal.

The number of such notifications received from Medical Practitioners during the year was 755. This was 269 less than the number for the previous year.

NOTIFICATIONS IN PAST 10 YEARS.

1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
644	1698	1308	762	752	934	1090	1525	1024	755

These numbers do not in any case include the notifications of chicken-pox required from time to time nor any of the voluntary notifications of phthisis pulmonalis.

Small Pox.—Cases notified, 34; deaths, 3; fatality per cent. 8.8.

RECORD OF PREVIOUS YEARS.

	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
Cases	10	0	0	0	0	0	0	4	27	34
Deaths	1	0	0	0	0	0	0	0	0	3
Fatality per cent	10.0	—	—	—	—	—	—	0	0	8.8

St. Helens had been free from Small-pox for four months, when a case was notified on the 6th January, 1904, from which time cases occurred at short intervals until the 12th April.

The more important details of the various cases are set out in tabular form and a general account of the outbreak is now given.

Towards the end of 1903 Small-pox had become prevalent in several of the neighbouring towns and the surrounding county district. The first case to appear in St. Helens was that of an insurance agent who had been in the habit of visiting Bold, a district where cases of Small-pox were known to have occurred; he sickened on the 2nd January and was notified and removed to hospital on the 6th.

The second case, that of a woman living in Newton Road was notified on the 12th January; she had sickened on the 9th, but the source of infection could not be definitely ascertained and suspicion centred round the visit of a tramp to the house about 14 days previously.

ST. HELENS, 1904.

CASES OF SMALLPOX DISCOVERED IN THE BOROUGH DURING THE YEAR.

No. OF CASE.	INITIALS OF NAME.	SEX.	AGE	ADDRESS WHENCE REMOVED.	SOURCE OF INFECTION.	VACCINATION.		CHARACTER OF ATTACK.	DATE OF RASH.	DATE OF ADMISSION.	DATE OF DISCHARGE OR DEATH.	
						V. inf.	Vaccinated in infancy					
1	J. S.	M.	22	67, Peter Street	Bold	..	..	Discrete	6-1-1904	6-1-1904	16-2-1904
2	Mrs. S.	F.	24	135, Newton Road	Probably tramp	..	..	Discrete	10-1-1904	12-1-1904	20-2-1904
3	M. A.	F.	34	30, Liverpool Street	..	..	..	Discrete	17-1-1904	18-1-1904	2-3-1904
4	J. N.	M.	27	13, Fern Street	..	..	..	Confluent	19-1-1904	20-1-1904	*28-1-1904
5	E. M.	F.	56	21, Eldon Street	Unrecognised case	..	..	Discrete	19-1-1904	20-1-1904	16-2-1904
6	M. H.	F.	50	44, Liverpool Street	..	..	..	Discrete	19-1-1904	20-1-1904	12-3-1904
7	H. J.	M.	46	86, Raglan Street	Bold	..	..	Confluent	20-1-1904	21-1-1904	*26-1-1904
8	J. M.	M.	39	114, Chancery Lane	..	..	..	Discrete	20-1-1904	21-1-1904	12-3-1904
9	E. G.	F.	24	8, Mount Street	..	..	..	Ditto	25-1-1904	26-1-1904	24-2-1904
10	R. F.	F.	24	230, Park Road	No 2	..	..	Ditto	27-1-1904	28-1-1904	27-2-1904
11	J. O'N.	M.	34	7, Latham Street	..	..	..	Ditto	29-1-1904	29-1-1904	2-4-1904
12	J. S.	M.	36	170, Park Road	..	..	..	Ditto	30-1-1904	30-1-1904	2-4-1904
13	A. A.	F.	..	Old Wint Hospital	Born in Hospital	..	..	Ditto	31-1-1904	31-1-1904	*8-2-1904
14	E. S.	F.	12	123, Merton Bank Road	Not discovered	..	..	Ditto	31-1-1904	1-2-1904	4-3-1904
15	A. H.	F.	17	205, Parr Stocks Road	Ditto	..	..	Ditto	6-2-1904	7-2-1904	19-3-1904
16	W. M.	M.	28	32, Lowe Street	Manchester	..	..	Ditto	8-2-1904	9-2-1904	29-3-1904
17	J. E.	M.	33	50, Harris Street	Common source, probably group 3-6	..	..	Ditto	14-2-1904	14-2-1904	25-3-1904
18	A. K.	M.	23	88, Phythian Street	..	..	..	Ditto	14-2-1904	15-2-1904	15-3-1904
19	P. C.	M.	22	44, Vincent Street	Common source with No. 21	..	..	Ditto	23-2-1904	23-2-1904	29-3-1904
20	M. T.	F.	40	77, Bold Street	No. 17	..	..	Unv.	24-2-1904	25-2-1904	12-3-1904
21	Mrs. B.	F.	36	14, Atherton Street	Common source with No. 19	..	..	Semi-confluent	26-2-1904	28-2-1904	30-4-1904
22	E. M.	M.	10	75, Silkstone Street	Not discovered	..	..	Discrete	26-2-1904	5-3-1904	23-4-1904
23	E. M.	F.	21	Ditto	..	..	..	Unv.	13-3-1904	13-3-1904	9-4-1904
24	J. M.	M.	7 wks	Ditto	..	..	..	Unv.	13-3-1904	13-3-1904	9-4-1904
25	T. M.	M.	19	Ditto	..	..	..	Unv.	14-3-1904	13-3-1904	23-4-1904
26	W. M.	M.	12	Ditto	..	..	..	Unv.	14-3-1904	13-3-1904	23-4-1904
27	J. M.	M.	17	Ditto	..	..	..	Unv.	14-3-1904	13-3-1904	23-4-1904
28	E. M.	M.	47	Ditto	Case 22	V. inf., 4 Marks good	16-3-1904	13-3-1904	9-4-1904
29	E. M.	F.	42	Ditto	..	..	..	V. inf., 1 Mark Bad	16-3-1904	16-3-1904	9-4-1904
30	E. S.	F.	38	3, Silkstone Street	..	..	..	V. inf., 1 Marks Good	17-3-1904	18-3-1904	22-4-1904
31	M. R.	F.	39	142, Boundary Road	..	..	..	V. inf., 1 Mark Fair	19-3-1904	20-3-1904	30-4-1904
32	E. A.	M.	35	9, St. Thomas' Street	..	..	..	V. inf., 1 Marks Fair	20-3-1904	21-3-1904	10-5-1904
33	E. L.	F.	35	78, Silkstone Street	..	..	..	V. inf., 1 Marks Good	20-3-1904	21-3-1904	25-4-1904
34	E. P.	F.	47	109, Stanhope Street	Probably Billinge	..	..	V. inf., 1 Mark Fair	21-4-1904	12-4-1904	11-5-1904

*Fatal Case

The third case was associated with cases Nos. 4, 5, 6, 9, and 13; these formed a group in which the source of infection was an unrecognised case.

The seventh case was infected in rather a peculiar fashion. The patient was employed by a firm of undertakers in town, and had been engaged in the funeral arrangements of a person outside the Borough who had died of Small-pox. Twelve days afterwards he took a very severe attack of the disease to which he succumbed on the 26th January, 1904. The whole circumstances attending the source of infection in this case was the subject of consideration by the Health Committee, who decided to communicate with the Local Authority of the district concerned, so that information of such cases might be mutually exchanged.

The eighth case along with cases Nos. 9, 10, 11 and 12 seemed to be associated in source of infection with case No. 2, all these cases arising from some undiscovered and unrecognised case.

In cases Nos. 14 and 15, no source of infection was discovered.

Case No. 16 was apparently infected at a football match in Manchester.

Cases Nos. 17 and 18 were associated together and had apparently a common source of infection, which, however, was not definitely ascertained; case No. 20 was infected by case No. 17.

Cases Nos. 19 and 21 were infected from a common source connected with a visit to a place of amusement.

Case No. 22 was ill for some time before being notified and the source of infection could not then be traced. Cases 23 to 33 inclusive, arose from the delay in the recognition of case No. 22.

Case No. 34, the last case of the outbreak, sickened on the 9th April, and here the infection was derived from an outbreak in a small township outside the Borough.

The outbreak of Small-pox in 1904 was the most extensive that has occurred during the past ten years, and gave rise on several occasions to considerable anxiety, but the precautions taken to prevent the spread of the disease were eminently successful. They were as follows:—

- (1) Isolation of the patient in the Small-pox hospital, Old Wint. This was carried out as soon as possible after the officers became aware of a case, and the additional accommodation at this hospital proved of the utmost value.
- (2) Disinfection of the house, furniture, bedding, clothing, etc. The work was done in the most thorough fashion by steam disinfection

of bedding, clothing, etc., stripping and limewashing or carbolising the walls, carbolising the furniture and subsequent fumigation.

- (3) Re-vaccination of all contacts who had not been re-vaccinated within a year. In connection with a single case (No. 2) as many as 149 persons, contacts and neighbours, were re-vaccinated immediately. To this important measure the success in dealing with the outbreak was largely due.
- (4) Visitation of contacts in their own homes daily for a period of three weeks after exposure to infection. It was not found necessary to stop contacts from working except for a short period, and in only one case was it necessary to remove a contact to ensure proper supervision.
- (5) Chicken-pox was added to the list of notifiable diseases for a period of three months, so that no genuine case of Small-pox should be overlooked.
- (6) Information of the movements of the patient previous to sicken-
ing and notification, was transmitted to the various Medical
Officers of Health concerned. This was in all cases attended to,
but the time has now arrived when all persons, suffering from
infectious diseases should be compelled to give accurate informa-
tion to the officers of the Local Authority.

VACCINATION.—Each outbreak of Small-pox furnishes additional proof of the great value of this measure as a protection from the disease. In the outbreak in St. Helens in 1904 the facts with regard to vaccination are set out in the following table:—

VACCINATION OF SMALLPOX CASES—1904.

Condition as regards Vaccination.	Type of the Disease.			Result.	
	Discrete.	Seini-confluent.	Confluent.	Recovery	Death.
Vaccinated	20	2	1	22	1
Re-vaccinated before infection ...	—	—	—	—	—
Had Smallpox ...	1	—	—	1	—
Un-vaccinated ...	8	1	1	8	2

It is thus seen that the fatality rate from Small-pox among the un-vaccinated was 20%, while among the vaccinated it was only 4.3%.

A patient sickens from Small-pox twelve days after he has caught the infection, and there were 9 cases vaccinated within this incubation period. Of these 9 cases, 3 were vaccinated five days before sickening, 3 six days, 1 seven days, and 2 eight days before sickening; eight of the cases were discrete, and recovered, but the ninth vaccinated five days before the onset was confluent, and died.

The following table gives the vaccination returns for St. Helens since 1891, and shows that the Borough compares favourably in this respect with other towns:—

VACCINATION RETURNS SINCE 1891.

YEAR	1 Births.	2 Vaccin- ated.	3 Insus- ceptible	4 Lead.	5 Con. Obje't'r	6 Post- poned.	7 Removed	8 Un- accounted	Percentage not Vaccinated including Columns 5, 6, 7, 8
1891	*2827	2345	15	386	—	—	76	5	3.3
1892	*2817	2424	6	318	—	—	63	6	2.7
1893	*2856	2378	14	371	1	—	91	1	3.7
†1894	*2711	2284	10	312	1	—	99	5	4.3
†1895	*2943	2443	17	378	3	1	99	2	4.1
†1896	*3006	2538	14	356	—	4	92	2	3.7
†1897	*3209	2680	11	390	4	7	110	7	4.9
†1898	*3238	2696	15	383	14	1	103	15	4.6
†1899	*3126	2625	32	346	10	3	94	16	4.8
†1900	*3148	2654	10	367	5	12	82	18	4.2
†1901	3157	2639	4	391	11	29	59	24	4.4
†1902	3245	2788	4	342	7	12	58	34	3.8
1903	3391	2977	8	325	2	6	62	11	2.6

*The above Returns are for St. Helens Sub-District of the Prescot Union, which does not include quite the whole of the Borough.

† The returns in Columns 6, 7, and 8, will still further be reduced for these years.

The above figures have been supplied by Mr. Griffin, Vaccination Officer for St. Helens.

Measles.—Cases, 2,194; Deaths, 131; Fatality, 5.97 per cent.

RECORD OF PREVIOUS YEARS.

	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
Cases	—	—	582	212	470	828	355	1245
Deaths	54	38	87	17	21	59	7	59
Fatality per cent	—	—	14.9	8.0	4.4	7.1	1.9	4.7	3.3	5.9

MORTALITY RATE PER 1000 IN PREVIOUS YEARS.

	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
St. Helens ..	.68	.46	1.04	.20	.24	.66	.07	.68	.01	1.47
England and Wales ..	.37	.55	.40	.42	.30	.39	.40	.38	.27	.35

Measles was very prevalent in the town in 1904 and made a large contribution to the death rate. At the request of the Local Government Board, a special report was prepared and submitted to the Health Committee on the 26th September last, dealing with the subject.

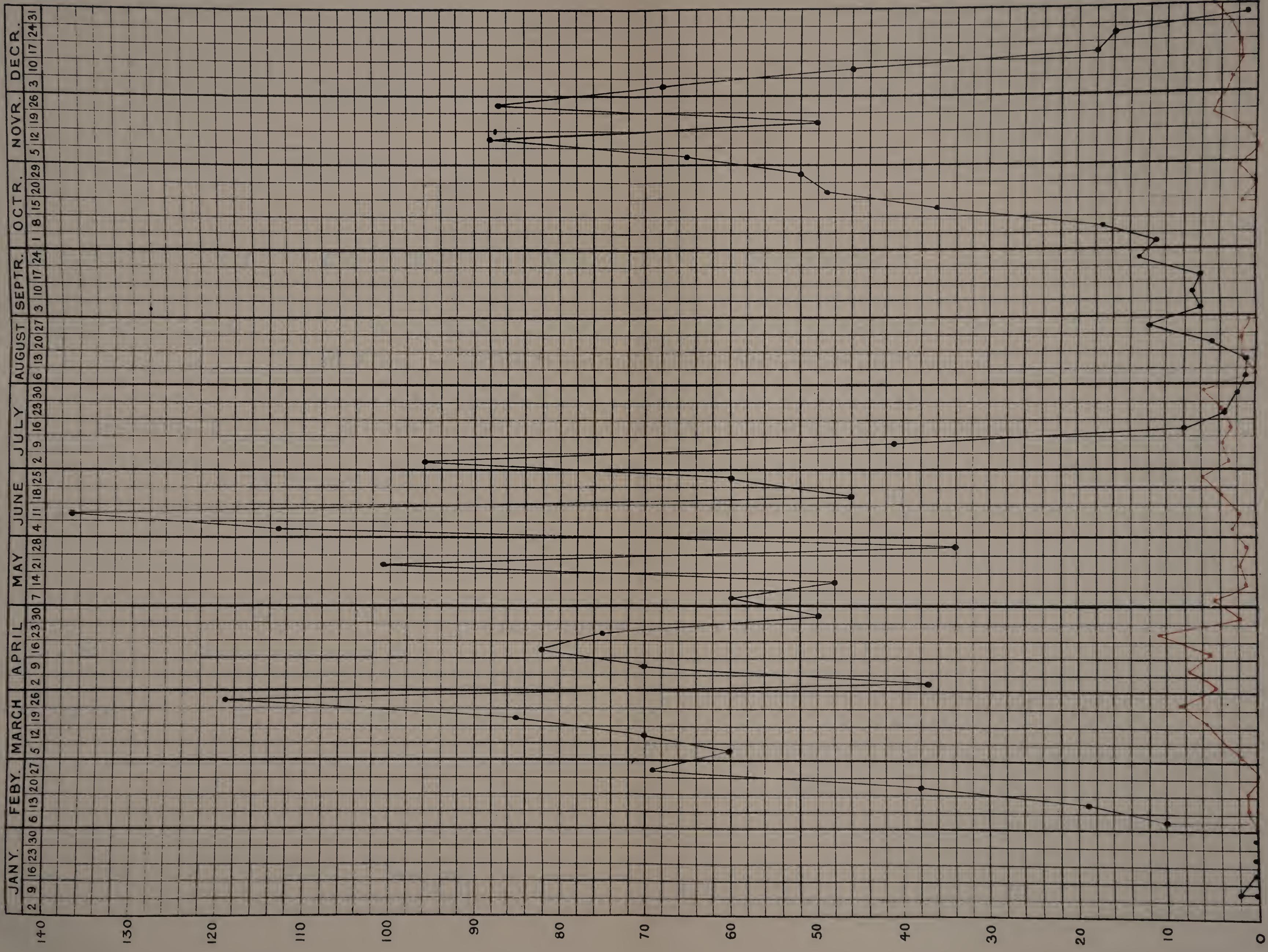
The previous history of Measles in St. Helens may be gathered from the above tables, and from Table A, page 18, which gives the deaths from this disease for the past 30 years. These show that in no year has the town been entirely free from this disease, and that it has appeared in epidemic form at intervals. In recent years the efforts made by the Health Committee would seem to have met with some success, but disastrous epidemics still recur.

In 1903 the Borough had been almost free from Measles, and during January, 1904, only two cases in Sutton had come to the knowledge of the Department. In February the disease became epidemic in North Ecclestone, where in the week ending February 6th, 10 cases occurred, and during the month the epidemic was confined to this neighbourhood, 169 cases being notified. In March the disease began to be epidemic in the East Sutton, Central, Parr and South Windle wards in rotation, and by the beginning of April practically all the wards in the town were affected. In June and July the epidemic prevalence of the disease was mostly confined to North and South Windle and West Sutton wards, while in August, cases were only appearing with frequency in the first of these. A renewed prevalence of the disease in Parr took place towards the end of September, and later in the year the disease again became prevalent in East Sutton. The monthly incidence and ward distribution of the cases is seen in the following table which shows that the East Sutton Ward suffered most severely, and that the month of the greatest prevalence of the disease was March.

CASES OCCURRING IN EACH WARD MONTH BY MONTH.

WARDS.	Jan.	Feb.	Mar	Apl.	May	June	July	Aug	Sep.	Oct.	Nov	Dec.	Total.
Ecclestone, North ..	—	169	149	24	3	9	—	—	—	2	8	—	364
Ecclestone, South ..	—	—	10	17	9	1	—	—	6	8	10	4	65
Central	—	1	61	64	48	23	2	2	2	6	7	3	219
Windle, North ..	—	—	3	51	39	76	27	13	13	—	2	—	224
Windle, South ..	—	—	36	50	22	75	44	—	—	1	1	3	232
Hardshaw	—	—	—	3	4	3	14	3	—	1	—	1	29
Sutton, East	1	16	60	11	62	19	1	—	1	38	210	101	520
Sutton, West	1	—	2	3	45	84	46	1	—	5	7	7	201
Parr	—	—	56	39	12	44	2	—	10	104	45	28	340
Totals	2	186	377	262	244	334	136	19	32	165	290	147	2194

WEEKLY NUMBER OF CASES & DEATHS FROM MEASLES 1904.



The number of cases coming to the knowledge of the Health Department in each week is shown in the appended chart, where it will be seen that the maximum number is recorded for the week ending June 11th, and that large numbers of cases occurred in the weeks ending March 26th, May 21st, June 4th, and July 2nd. The recurring rise and fall in the number of cases is to be noticed, and the drop at the end of July and in August is specially remarkable. The number of fatal cases was 131 and these are shown in the weeks they occurred on the same chart. It is to be noticed that the greatest number of deaths were recorded in the week ending April 23rd, and that the number of fatal cases fell markedly during August and September.

The deaths occurring month by month since 1895 are shown in the following table, where it will be noticed that the number of deaths has always fallen during September, forming a marked contrast to the number occurring in the other months. The maximum number of deaths occur in the months from October to April inclusive.

DEATHS OCCURRING IN EACH MONTH SINCE 1895.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1895	3	10	5	3	2	11	9	6	1	1	3	0	54
1896	1	3	11	10	2	1	4	2	0	2	1	1	38
1897	0	1	2	2	15	19	9	8	6	3	13	9	87
1898	2	1	0	1	2	8	1	0	1	0	1	0	17
1899	0	0	0	0	0	2	0	0	1	5	4	9	21
1900	19	9	6	9	5	2	3	5	1	0	0	0	59
1901	0	0	1	0	1	1	0	0	0	1	0	3	7
1902	7	7	8	8	9	9	1	2	2	5	1	0	59
1903	0	0	1	0	0	0	0	0	0	0	0	0	1
1904	0	2	21	31	9	16	19	4	0	3	11	15	131
Totals...	32	33	55	64	45	69	46	27	12	20	34	37	474

The fatal cases occurred almost wholly among children under 5 years of age, only 3% of the deaths being recorded in persons over that age. This can be seen in the following table, which shows the record since 1895,

AGES AT DEATH FROM MEASLES—1895 TO 1904.

	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	Total.
0 to 3 months...	0	0	0	0	0	1	0	2	0	3	6
3 „ 6 „	1	0	2	0	0	1	0	1	0	0	5
6 „ 12 „	8	7	22	2	4	11	1	14	0	22	91
1 „ 2 years ...	26	14	32	12	8	25	3	28	0	49	197
2 „ 3 „ ...	11	11	19	2	7	12	1	6	0	27	96
3 „ 4 „ ...	4	3	3	0	1	4	0	3	0	15	33
4 „ 5 „ ...	1	3	6	1	1	2	0	3	1	11	29
5 „ 10 „ ...	3	0	2	0	0	3	2	2	0	4	16
Over 10 „ ...	0	0	1	0	0	0	0	0	0	0	1
Total at all Ages...	54	38	87	17	21	59	7	59	1	131	474

The preceding facts are important and must be carefully considered in detail. It is to be remembered that Measles is essentially a disease of childhood, and in a town like St. Helens where the proportion of young lives is relatively great, the incidence and mortality from this disease will be correspondingly greater. The extent of an epidemic in any one year will also depend largely on the number of children not having suffered from Measles who are living in the community at that time. Further, Measles will become prevalent not only in proportion to the number of susceptible individuals, but also in proportion to the opportunities the disease itself has of spreading. These are the main considerations involved in the prevalence of Measles and it is the last that comes particularly within the scope of preventive medicine. Though the varying proportion of susceptible individuals has a bearing upon the epidemicity of the disease, it must not be thought that on this account Measles is a disease inevitable to all. In each epidemic a certain proportion of children escape, and in St. Helens in recent years an increasingly large number of persons have been growing up who have not had this disease, but the deep-rooted prejudice that Measles is a minor ailment from which all children must suffer is still common among the present day mothers and grandmothers. The epidemic of last year was of a most extensive character,

2,194 children being affected, but there are in the Borough 12,689 children under 5 years of age, and certainly not more than 2,000 of these had Measles prior to 1904. In the years prior to 1897 no system of notification of this disease was in vogue, and an estimate can only be made of its prevalence by the figures furnished by the death returns. By taking an average fatality rate of 5 deaths per 100 cases, and regarding the deaths from Measles since 1875, the following results are arrived at:—At the end of the year 1884, 87.5 per cent of the children under ten years had had a previous attack of Measles, at the end of 1889, 83.3 per cent; at the end of 1894, 63. per cent; at the end of 1899, 44.6; and at the end of 1904, 4.18. These figures would tend to show the erroneous and harmful nature of the popular belief that Measles falls to the lot of all children.

Measles spreads chiefly by the association of the sick with the healthy and less frequently by the carriage of infection by persons not suffering or by infected articles. In the spread of this disease the question of infection by water or foods is not known to enter, and the influence of insanitary surroundings apart from questions of overcrowding may be disregarded. Enquiry has therefore to be directed to the means by which children are brought together, and here school influence has the most important place. The significant fall in the number of deaths in September, already alluded to, is best explained by the closure of the school for the summer vacation, it being remembered that Measles is developed 10 to 14 days after exposure to infection, and that deaths usually take place about a fortnight after the commencement of an attack. But apart from this there is no other disease which shows such a marked retardation in its spread after compulsory closure of the school by the Local Authority. The influence of the association of children outside of the school is not so great, and may to some extent be gauged by the fact that in less than 5% of the cases coming to the knowledge of the Department, the first to sicken in a family was a younger member not attending school. School attendance then is the chief factor in the spread of measles, and by examining the foregoing statistics relative to age, it will be seen that it is the infant departments of the Schools that are involved. The infection is almost invariably introduced by children in an infectious condition either actually suffering or just recovered from measles. The duty of detecting symptoms of illness in a child falls first on its parents, and if the parents fail to do this the duty falls next upon the school teacher, who during a large portion of the day is in charge of the child in place of the parent. Mothers are often ignorant and careless with regard to measles but the school teacher who has to regard many children should not be ignorant of or careless in detecting the ordinary appearances of

illness, and in the control of this disease much help must be expected from the infant school teachers who have the children under their care when the infection is actually spreading. So far as the spread of Measles is concerned it would be much better if children under the age of five were not received into school at all as it is under that age that almost all the deaths from the disease occur. The measures adopted for controlling the disease may now be considered.

(a) Cases of Measles or suspected Measles were reported by the school teachers to the Medical Officer of Health, by means of postcards giving the name and address of the case or suspected case, and the class it was attending. The postcards were supplied by the Health Committee, and a fee of 3d. allowed for every case notified. This system of notification was carried out fairly promptly and willingly, by the responsible school teachers concerned, who notified also absentees from school on account of Measles in other members of the family not attending School. Further cases came to light during the visits of the Inspectors, and by comparing the number of known cases with the number of deaths registered, it is reasonable to suppose that the Department became aware of the large majority of cases. This system of notification starting with the assumption that Measles is only a school disease is not quite correct, and it must always be supplemented by careful enquiries in the neighbourhood of the known cases. Only the first cases in the family were paid for, and the amount actually expended was £18 1s. 9d. (1,447 cases). With reference to the general notification of Measles by the Medical Practitioners, experience has shown that in those towns which have adopted this system the benefit derived therefrom has not been at all proportionate to the great expense incurred. It has been claimed that a system of voluntary notification by medical Practitioners, whereby the first case occurring in a house is notified and no other cases occurring therein notified for three months, would give equally valuable information for controlling the disease, at a much less cost. In the recent epidemic, in as many as 25% of the cases discovered, no medical man was called in, so that a system of modified notification depending upon the medical practitioners alone would, to be efficient, also require to be supplemented by enquiries like those just mentioned ; such a system would, however, in the first instance, afford more accurate information to the department.

(b) All cases were visited by the women sanitary Inspectors, who gave instructions as to the means to be adopted to prevent the spread of the disease. It was found that the standard of isolation that could be adopted at home was necessarily low. Hospital isolation was not, however, practicable, and the visit and subsequent visits of the Inspectors educated the

people in the nature of the disease and the need for taking precautions. Altogether 3,904 such visits were paid. The schools were frequently visited both by the inspectors and the Medical Officer, and the teachers were advised from time to time as to the exclusion of certain scholars. Altogether 190 visits were made to schools, and 3,650 notices sent to teachers.

(c) When the last case had recovered and was free from infection, the house was disinfected and the teachers advised that the children could return to school. There were 1,336 houses disinfected for Measles by the department.

(d) It was frequently found necessary to close the infant department of the schools, and this proved a most useful help in controlling the disease. The following is a list of the schools closed, and the period for which they were shut:—

Christ Church Mission School, Knowsley Road	...	Feb. 16th to Mar. 8th.
St. Thomas' Infant School, Lyon Street	...	Mar. 1st to Mar. 22nd.
St. Teresa's R. C. Schools, Newtown	...	Mar. 8th to Mar. 29th.
Sutton National Schools	...	Mar. 9th to Mar. 30th.
British Schools, Knowsley Road	...	Mar. 11th to April 1st.
Cowley British Schools, College Street	...	Mar. 19th to April 9th.
York Street Schools	...	Mar. 21st to April 11th.
British Schools, Arthur Street	...	Mar. 21st to April 11th.
Parr Flat Schools, Provident Street	...	Mar. 22nd to April 12th.
Park Road Wesleyan School	...	Mar. 23rd to April 13th.
All the Infant Departments in the Borongh		Mar. 28th to April 18th.
Ditto.	ditto.	April 19th to May 2nd.
Sutton, St. Anne's R. C. School	...	Dec. 2nd. to Dec. 23rd.
Brookfield Schools, Park Road	...	Dec. 2nd to Dec. 23rd.
Sutton St. Anne's School (Boys & Girls Depts.)	...	Dec. 7th to Dec. 28th.

(e) Information was distributed by the Department regarding the symptoms and the infectious nature of Measles, so as to educate the public in the early recognition of and the importance of taking precautions in this disease. The importance of detecting illness amongst the scholars was specially brought before the school teachers. Handbills were issued to the school authorities with the request that one be given to each child before leaving school to take home.

Scarlet Fever. Cases, 416; deaths, 17; fatality per cent., 4.08.

RECORD OF PREVIOUS YEARS.

	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
Cases ..	220	1310	914	385	335	580	719	1224	728	416
Deaths ..	9	59	44	24	8	25	29	52	26	17
Fatality per cent ..	4.0	4.5	4.8	6.2	2.38	4.3	4.03	4.2	3.57	4.08

MORTALITY RATE PER 1000 IN PREVIOUS YEARS.

	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
St. Helens ..	.11	.72	.53	.28	.09	.28	.34	.60	.29	.17
England and Wales ..	.14	.18	.14	.11	.12	.12	.13	.15	.12	.11

The prevalence of Scarlet Fever in 1904 again showed a considerable fall, the number of cases notified being less than in any year since 1899. The fatality rate among the cases was about the average for previous years.

The disease was most prevalent in North Windle and North Ecclestone wards. The largest number of cases notified in any one month occurred in October. The following table giving the monthly and ward distribution of the cases shows that during 1904 there was no epidemic prevalence of Scarlet Fever.

CASES OCCURRING IN EACH WARD MONTH BY MONTH.

WARDS.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
North Ecclestone ..	1	8	3	6	4	6	8	4	4	8	4	6	62
South Ecclestone ..	4	1	2	3	1	1	—	3	1	1	2	1	20
Central	3	4	—	1	4	—	3	1	1	1	1	—	19
North Windle ..	7	4	2	3	10	7	15	2	5	12	3	10	80
South Windle ..	—	1	3	1	5	4	4	3	1	7	4	—	33
Hardshaw ..	6	1	3	2	4	4	3	5	5	7	3	2	45
Sutton East ..	6	1	2	6	3	5	1	3	—	5	2	11	45
Sutton West ..	7	7	3	7	5	5	5	5	2	4	3	3	56
Parr	1	8	7	7	3	3	3	5	4	5	4	6	56
Total ..	35	35	25	36	39	35	42	31	23	50	26	39	416

The greatest incidence of the disease fell on the early years of life, 74% of the cases being under 10 years of age. The disease was most fatal between the ages of 2 and 3 years, giving a fatality rate then of 19.2 per cent. of the cases notified.

CASES AND DEATHS AT VARIOUS AGES.

Ages ..	Months.				Years.										Total		
	0-3	3-6	6-9	9-12	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10 to 15	15 to 20		
Cases ..	1	1	4	2	14	36	48	48	35	43	29	29	19	76	20	11	416
Deaths ..	—	—	—	—	1	7	4	1	1	2	—	—	—	1	—	—	17

The 416 cases occurred in 352 houses as follows:—In 308 houses (74% of the cases) only one case occurred; in 31 houses two cases occurred; in 9 houses three cases occurred; in 2 houses four cases occurred; in one house five cases occurred; and lastly in one house six cases occurred. In the 352 houses in which cases of scarlet fever occurred there were 590 other children who were said not to have had scarlet fever previously and who did not contract it during the year.

The number of cases removed to hospital was 325, or 78.1 per cent of the cases. The 325 children were removed from 265 houses in which the number of remaining susceptible children who did not contract the disease during the year was 480. In 87 other houses which were almost all large and commodious, 91 cases were isolated at home, and in these the number of remaining susceptible children who did not contract the disease was 110. This result shows a considerable advantage for hospital isolation over isolation in large and commodious houses. In addition to isolation the other precautions adopted were visits of enquiry by the Sanitary Inspectors and in some cases by the Medical Officer, disinfection and the supply of disinfectants, and exclusion of the children of an infected household from school.

Diphtheria. Cases, 169; deaths, 22; fatality per cent, 13.01.

RECORD OF PREVIOUS YEARS.

	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
Cases	66	72	66	60	64	77	85	93	126	169
Deaths	8	17	20	16	15	19	33	20	23	22
Fatality per cent ..	12.1	23.6	30.3	26.6	23.4	24.6	38.8	21.50	18.25	13.01

MORTALITY RATE PER 1000 IN PREVIOUS YEARS.

	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
St. Helens .. ..	.10	.20	.24	.18	.17	.21	.38	.23	.26	.24
England and Wales ..	.25	.29	.24	.24	.29	.29	.27	.23	.18	.17

Diphtheria of late years has shown a considerable tendency to increase, and in 1904 more cases were notified than in any of the ten preceding years. On the other hand, the fatality rate seems to be steadily diminishing, and the disease in 1904 was less fatal than in any previous year recorded since 1895. Despite the large increase in the notifications there was at no time epidemic prevalence, and this can be seen in the following table giving the monthly and ward distribution of the cases. It will be seen that the wards which have suffered most severely were North Windle, Hardshaw and Parr, a result very similar to those recorded in previous years. The greatest prevalence of the disease occurred in June.

CASES OCCURRING IN EACH WARD MONTH BY MONTH.

WARDS.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
North Eccleston	2	3	1	1	—	5	2	3	1	1	1	—	20
South Eccleston	—	1	3	1	1	—	2	—	2	4	1	2	17
Central	—	1	4	1	—	—	—	—	—	—	1	1	8
North Windle..	3	3	3	—	1	5	3	2	3	1	6	1	31
South Windle..	3	3	2	1	1	5	1	—	1	1	—	—	18
Hardshaw	3	5	3	1	2	3	2	1	1	3	—	2	26
East Sutton....	1	1	—	3	—	5	2	1	1	—	1	2	17
West Sutton ..	2	1	—	—	1	1	1	—	—	1	1	2	10
Parr	5	2	4	—	3	1	3	1	—	2	—	1	22
Totals ..	19	20	20	8	9	25	16	8	9	13	11	11	169

The greatest incidence of the disease fell on children under ten years of age, and the disease was most fatal at the ages from 1 to 4 years.

CASES AND DEATHS ACCORDING TO AGE.

	Under 1 year	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-15	15-20	Over 20	Total
Cases ..	1	12	14	17	18	19	16	9	15	2	14	10	22	169
Deaths ..	1	5	5	5	1	2	1	—	1	—	1	—	—	22
Fatality per cent	100	41.6	35.7	29.4	5.5	10.5	6.2	0	6.6	0	7.1	0	0	13.01

These 169 cases occurred in 156 houses as follows :—In 145 houses (85.8% of the cases) only one case occurred ; in 10 houses two cases occurred, and in one house four cases occurred. In the 156 houses in which the cases of diphtheria occurred there were 244 children under 10 years of age, who were said not to have had diphtheria previously, and who did not contract it during the year.

It appears then that there was not much evidence of the infectivity or epidemicity discovered in 1904. Recent bacteriological investigation has proved that many indefinite cases of sore throat found in association with well marked cases of diphtheria are also genuine cases. Indeed it seems probable that the disease is spread not infrequently by infection lurking in the apparently normal throats of contacts.

In the houses in which diphtheria occurred examination was specially made for defects in drainage, and in 24, 15.3 per cent defects were found.

With the increased accommodation at the Sanatorium it is now possible to isolate cases of diphtheria and during the latter half of 1904 advantage was taken of this in several cases. A supply of anti toxin for prophylactic and curative purposes was kept and this was extensively used by the medical men in the town, and proved of great service. From what has been already said, it will be seen how important is bacteriological examination in all cases where the suspicion of diphtheria arises, as it is not possible by other means to exclude certain genuine cases. These bacteriological examinations have been made for many years now in St. Helens by the Medical Officer and have proved of great value to the community, and it is hoped that in the near future all suspected cases of this disease will be subjected to this method of examination. The other precautions taken consisted in the usual visits of enquiry, disinfection and the supply of disinfectants, and exclusion of contacts from school.

Whooping Cough. Deaths 49.

RECORD OF PREVIOUS YEARS.

DEATHS	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	
..	..	14	78	33	34	41	56	17	18	30	49

MORTALITY RATE PER 1000 IN PREVIOUS YEARS.

	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	
St. Helens ..	..	·17	·96	·39	·40	·47	·63	·20	·20	·34	·55
England and Wales	·30	·41	·35	·31	·30	·34	·30	·29	·27	·34	·34

This disease was most prevalent in North Ecclestone ward, but many cases also occurred in North and South Windle wards. The largest number of deaths occurred in the 1st quarter and in the month of March.

DEATHS OCCURRING IN EACH WARD MONTH BY MONTH.

WARDS.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
North Ecclestone	—	1	4	2	—	—	1	1	1	—	—	4	14
South Ecclestone	—	—	—	—	—	—	—	1	—	—	—	1	2
Central	—	—	—	—	—	—	—	—	—	—	—	—	—
North Windle..	—	1	1	1	1	1	—	—	—	1	2	2	10
South Windle..	—	—	2	1	—	1	2	1	—	—	1	—	8
Hardshaw	2	—	2	—	1	—	—	—	—	—	—	—	5
Sutton, East ..	—	—	—	—	—	—	—	—	—	—	1	—	1
Sutton, West ..	—	—	—	—	—	—	—	1	—	1	1	1	4
Parr	1	2	1	—	1	—	—	—	—	—	—	—	5
Totals ..	3	4	10	4	3	2	3	4	1	2	5	8	49

The deaths with one exception were all of children under 5 years of age.

DEATHS AT VARIOUS AGES.

0-3 months	3-6 months	6-12 months	1-2 yrs.	2-3 yrs.	3-4 yrs.	4-5 yrs.	over 5 years.
4	4	5	18	6	10	1	1

Whooping cough was therefore more prevalent in 1904 than it had been since 1900. This is a disease which causes many deaths and serious damage to health. At present there is little done in any town to control the disease as it is believed to be infectious for some period before the characteristic symptoms develop, which would therefore make many of the usual preventive measures, were they adopted, of no great value. The public, however, ought to regard this as a dangerous infectious disease, and the sufferers both for their own sakes and for the protection of the other members of the community, ought not to be allowed to go about in public places ; the movements of child-contacts also of these cases should be controlled.

Typhoid Fever. Cases, 61 ; Deaths, 13 ; Fatality per cent. 21.3.

RECORD OF PREVIOUS YEARS.

	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
Cases	257	166	147	136	221	123	164	81	76	61
Deaths	59	40	33	30	43	19	34	25	18	13
Fatality per cent.	22.6	23.8	22.4	22.6	19.4	15.4	20.7	30.8	23.7	21.3

MORTALITY RATE PER 1000 IN PREVIOUS YEARS.

	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
St. Helens ..	.74	.49	.39	.36	.49	.21	.40	.29	.20	.14
England & Wales ..	.17	.17	.16	.18	.20	.17	.16	.13	.10	.09

The prevalence of Typhoid Fever in 1904 in St. Helens was the lowest on record ; the fatality rate of the cases was lower than that of the past two years. South Windle and South Eccleston wards were almost free from the disease, but otherwise the cases were distributed evenly over the Borough. As in former years the disease was most prevalent during the autumn months.

CASES OCCURRING IN EACH WARD MONTH BY MONTH.

WARDS.	Jan.	Feb.	Mar.	Apl.	May	J'ne	July	Aug	Sep.	Oct.	Nov	Dec.	Total.
North Eccleston	—	—	—	—	—	1	—	—	4	1	1	1	8
South Eccleston	1	—	—	—	—	—	—	—	—	—	1	—	2
Central ..	—	—	—	—	—	—	—	1	2	1	5	1	10
North Windle ..	—	1	—	1	—	1	—	—	3	2	1	—	9
South Windle ..	—	—	—	—	—	—	—	—	—	—	1	—	1
Hardshaw ..	—	—	—	—	—	1	—	1	3	—	3	2	10
East Sutton ..	1	—	—	—	—	—	1	1	1	—	1	1	6
West Sutton ..	1	1	—	—	1	—	—	—	2	—	—	2	7
Parr	—	—	1	1	—	1	—	3	1	—	—	1	8
Total ..	3	2	1	2	1	4	1	6	16	4	13	8	61

CHART No. 2.

CHART SHEWING RELATIONSHIP BETWEEN CASES OF TYPHOID FEVER AND THE MEAN TEMPERATURE OF THE SOIL AT 4 FEET AND OF THE AIR AND ALSO LEVEL OF GROUND-WATER DURING EACH WEEK IN 1904.

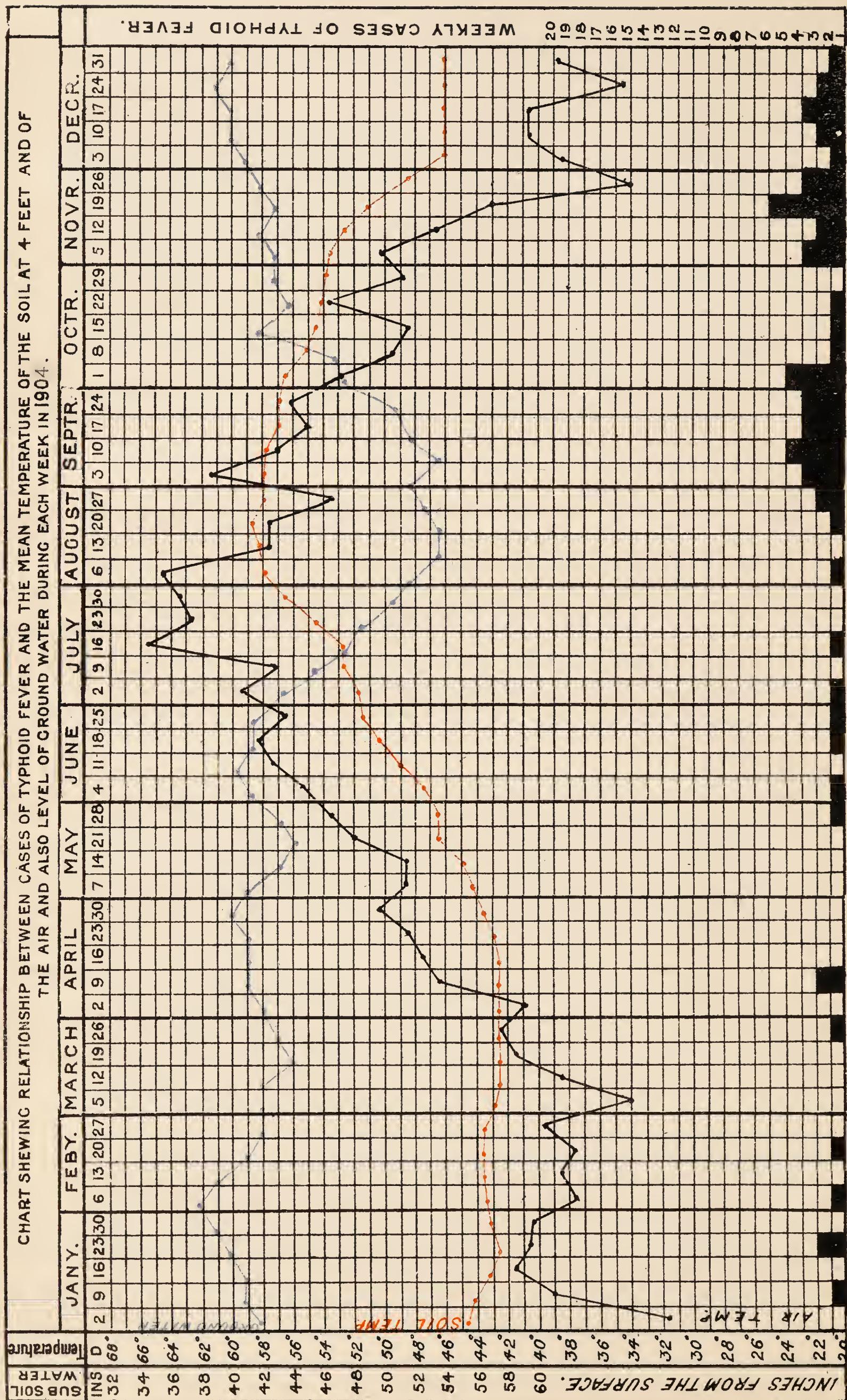
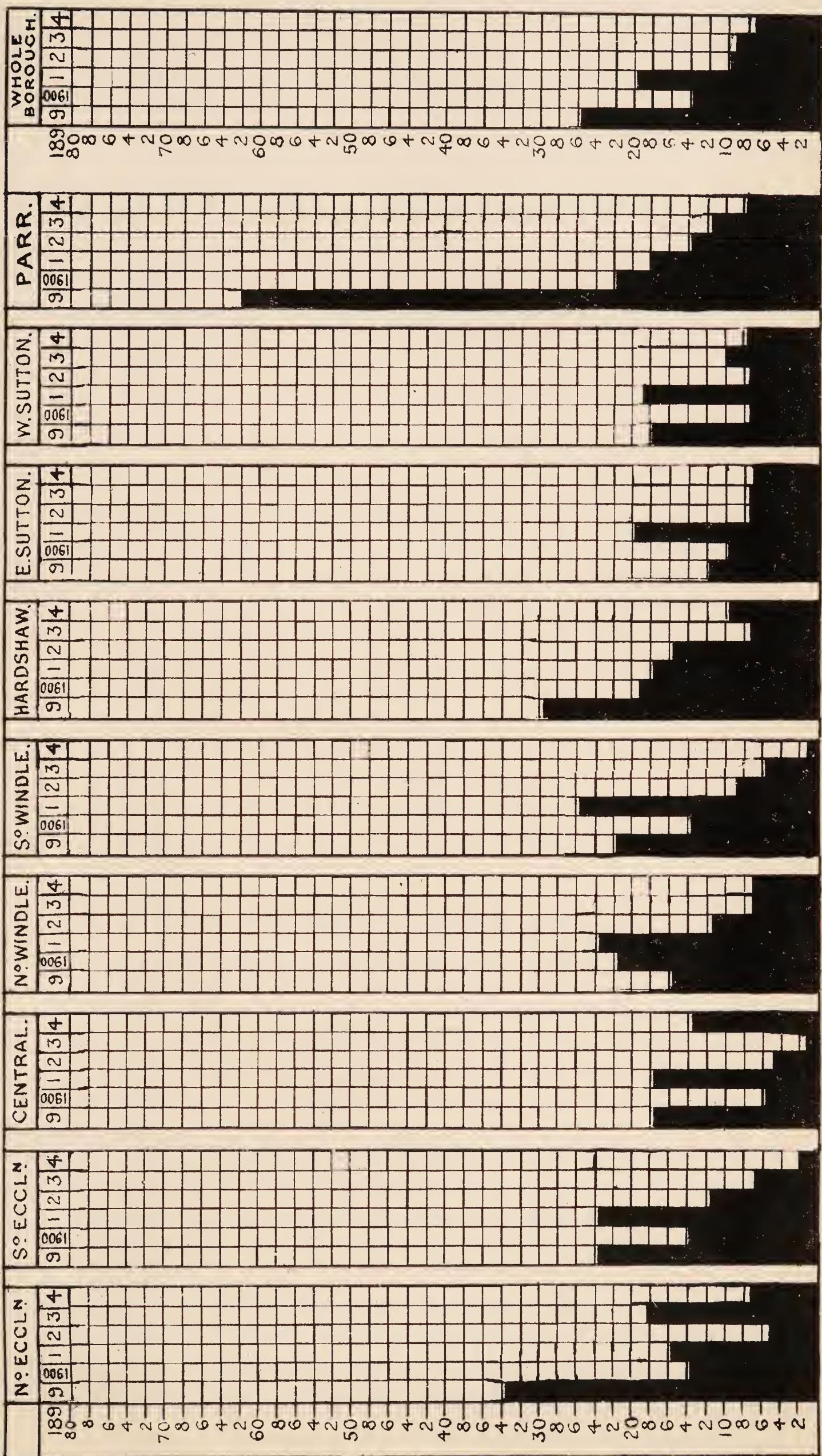


CHART N° 3.

TYPHOID SICKNESS, (S^T. HELENS / 899 to 1904, INCL.)



Rates per 10000 per annum.

The following table shows the sickness rate per 1000 of the population in each ward since 1895.

MORBIDITY RATE PER 1000 IN EACH WARD.

WARDS.	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
Eccleston, North ..	7.17	2.29	1.83	1.69	3.22	1.34	1.49	0.46	1.81	.71
Eccleston, South ..	3.37	2.19	0.83	1.75	2.28	1.23	2.38	1.18	0.63	.20
Central ..	3.24	1.68	1.52	0.80	1.68	0.55	1.66	0.42	0.13	1.36
Windle, North ..	2.97	3.71	4.27	1.36	1.43	2.20	2.28	1.18	0.66	.73
Windle, South ..	2.78	2.18	1.01	1.21	2.15	1.37	2.43	0.84	1.59	.11
Hardshaw ..	2.30	1.59	1.55	1.52	2.88	1.82	1.75	1.53	0.70	.99
Sutton, East ..	.85	.55	.53	.94	1.13	0.91	1.86	0.67	0.77	.65
Sutton, West ..	5.03	2.27	2.44	.76	1.70	0.73	1.84	0.61	1.00	.76
Parr ..	1.45	2.15	1.89	4.23	6.06	2.17	1.80	1.36	1.14	.75
Whole Borough ..	3.23	2.07	1.78	1.60	2.55	1.37	1.93	0.94	0.86	.68

The number of cases of Typhoid Fever was greatest between the ages of 15 and 25 years, but the fatality rate was greatest after this period.

CASES AND DEATHS AT VARIOUS AGES.

	Under 5 years.	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	Over 55	Total.
Cases ...	—	8	25	17	6	3	2	61
Deaths ...	—	2	3	3	2	1	2	13

Comparing the morbidity rates from Typhoid Fever in the Great Towns, St. Helens occupies quite a favourable place, 20 having a higher sickness rate; comparing the mortality rate it is seen that 13 towns have a higher death rate from this cause. The record for 1904 is extremely

satisfactory especially as last year was one in which the weather conditions were peculiarly favourable to the spread of Typhoid Fever. This disease a few years ago in St. Helens was recurring in autumn epidemics of considerable and sometimes of great severity, and the continued gradual reduction in the number of cases occurring annually is a matter of great interest, and demonstrates the wisdom of the policy adopted by the Health Committee.

The largest proportion of the cases, amounting to 42.6 per cent occurred in privy midden houses, while 37.8 per cent occurred in houses with tub and pail, and only 19.6 per cent in water closet houses. This proportion is all the more marked when it is considered that only 16.5 per cent of the houses in the Borough have privy middens.

Defective drains were found in 23 per cent of the houses. In no case was there any evidence of milk or water infection. The 61 cases occurred in 55 houses as follows:—in 50 houses one case occurred, being 81.9 per cent of the cases; in four houses two cases occurred; and in one house there were three cases.

The weekly number of cases of Typhoid Fever are shown in the appended chart (No. 2) in relation to the temperature of the soil at four feet, the mean temperature of air and the level of the sub-soil water. It will be seen that the numbers were greatest when the soil temperature reached 58°F. Chart No. 3 shows the Typhoid Fever rates in each ward of the Borough, and the spot map at the end of the report shows the exact situation of the cases occurring in 1904.

Of the cases notified, 43, or 70.5 per cent were removed to hospital.

The precautions adopted to prevent the spread of the disease were the same in former years, namely (1) enquiry as to the source of infection and the existence of insanitary conditions in the house; (2) immediate removal of insanitary conditions in the neighbourhood of the house; (3) the removal by means of special pails, of all infective and infected material, twice or thrice weekly; (4) the supply of disinfectants twice a week, and the final disinfection of the premises; and (5) the removal of the patient, when practicable, to hospital.

As Typhoid Fever is a disease which is frequently also personally infectious, it is important to recognize the milder cases, many of which are apt to be thought of a simpler nature. The value of bacteriology in the

diagnosis of this disease is now accepted by all, and considerable advantage of the opportunities offered was taken by the medical men of the town, and proved of great value both to their patients and to the Borough.

Diarrhoea.—Deaths 120.

RECORD OF PREVIOUS YEARS.

	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	
DEATHS	101	63	133	140	114	91	97	50	53	120

MORTALITY RATE PER 1,000 IN PREVIOUS YEARS.

	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	
St. Helens..	..	1.27	.77	1.60	1.65	1.31	1.02	1.14	.58	.60	1.35
England & Wales..		.88	.55	.86	.96	.98	.69	.91	.38	.50	.86

The disease now to be considered is distinguished by special features of its own. No immediate cause can usually be discovered for the attack. Although not confined to any one season this disease is apt to occur in epidemics in the early autumn, particularly after a hot dry summer. Infants—especially those that are hand-fed—and young children are particularly liable to be attacked, and to both of these the disease is very fatal, but older children and adults are not wholly free from this illness which is then usually less severe. Diarrhoea is in most cases a prominent symptom, but it varies in degree and is sometimes accompanied by an amount of depression out of proportion to its severity. The illness, like other zymotics, tends to run a definite course. The disease is probably of microbial origin, but the actual organism has not been definitely recognised. It would seem certain, however, that infection is conveyed by food, and that improper feeding creates a strong pre-disposition to attack.

The disease is known by a great variety of names which increases the difficulty of the classification of the cases, and it would be of great advantage if some distinctive name were generally used.

The number of deaths recorded in 1904 from Diarrhoea in St. Helens, was greater than that in any previous year since 1898. The death rate from this cause was 1.35 per 1,000 as against 0.60 for 1903. In England and Wales the death rate from Diarrhoea in 1904 was .86 per 1,000.

The deaths occurred in greatest number in North Eccleston ward, but many also occurred in South Windle, Hardshaw and Parr wards. The largest number of deaths were recorded in the month of August.

DEATHS OCCURRING IN EACH WARD MONTH BY MONTH.

WARDS.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
North Eccleston	—	—	—	—	—	—	2	13	6	2	—	—	23
South Eccleston	—	—	—	—	—	—	1	5	3	1	1	—	11
Central	—	—	—	—	—	—	2	3	1	—	—	—	6
North Windle ..	—	—	—	—	—	—	—	8	1	2	—	—	11
South Windle ..	—	—	—	—	—	—	4	10	3	2	2	—	21
Hardshaw	—	1	—	1	—	—	2	8	6	1	—	—	19
Sutton, East ..	—	—	—	—	—	—	1	3	—	—	—	—	4
Sutton, West ...	1	—	—	—	—	—	—	4	3	1	—	—	9
Parr	—	—	—	—	—	—	1	7	7	1	—	—	16
Total ..	1	1	—	1	—	—	13	61	30	10	3	—	120

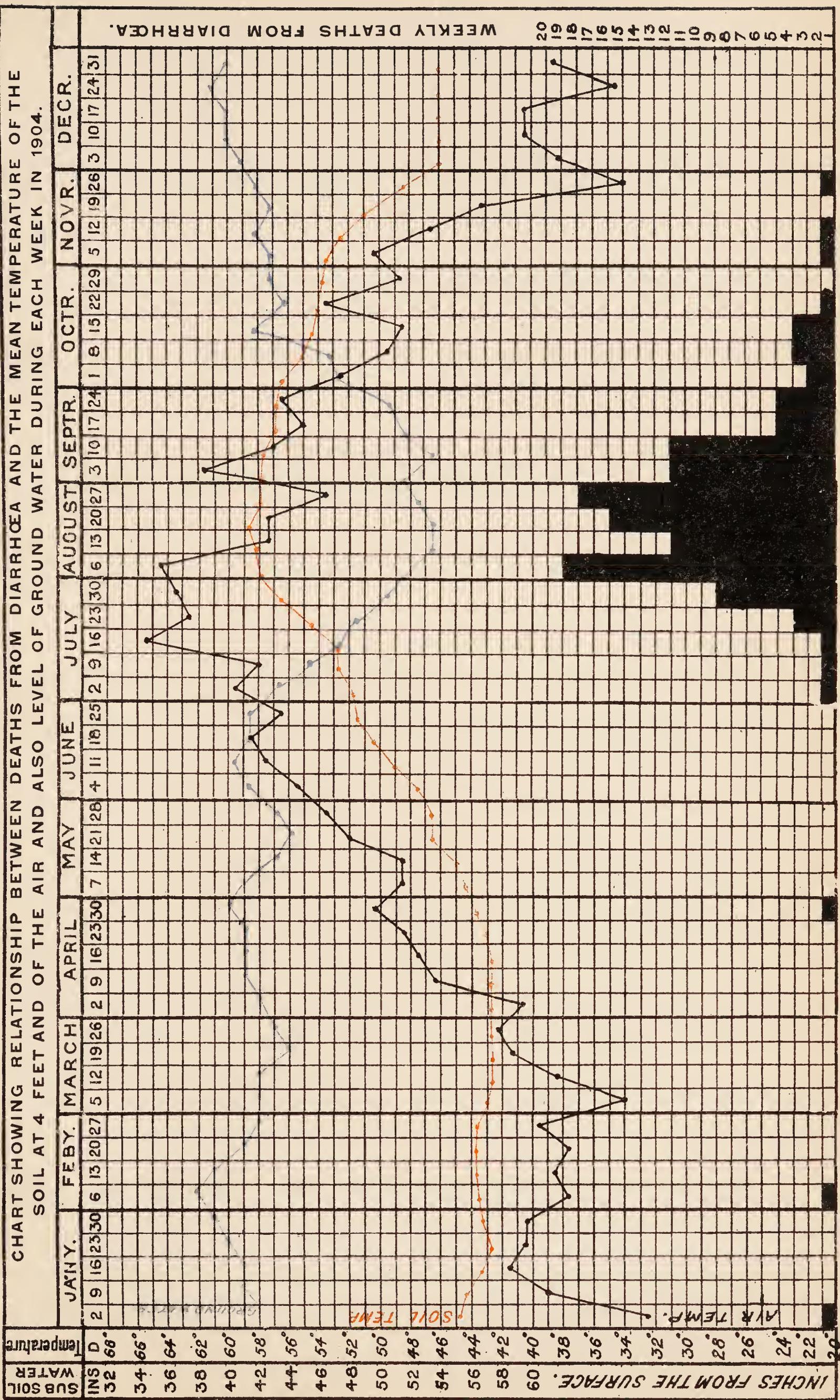
The following table recording the deaths from 1895 shows that by far the larger number of deaths (over 80%) occur in the third Quarter.

DEATHS IN EACH MONTH SINCE 1895.

	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
January ...	0	0	1	2	0	1	1	1	0	3	1
February ...	0	0	0	1	0	2	0	0	0	0	1
March ...	2	0	0	0	1	0	2	0	1	0	0
1st Quarter ...	2	0	1	3	1	3	3	1	1	3	2
April ...	0	1	3	0	0	0	2	0	1	1	1
May ...	0	1	2	2	2	0	0	1	1	1	0
June ...	0	4	6	3	4	0	2	2	3	0	0
2nd Quarter...	0	6	11	5	6	0	4	3	5	2	1
July ...	5	29	22	13	16	28	13	33	0	3	14
August ...	14	39	15	79	54	47	42	50	5	19	61
September...	7	12	9	25	51	29	23	7	26	16	30
3rd Quarter...	26	80	46	117	121	104	78	90	31	38	105
October ...	8	12	3	3	9	5	4	1	8	7	9
November ...	1	3	1	4	3	1	1	1	3	3	3
December ...	1	0	1	1	0	1	1	1	2	0	0
4th Quarter...	10	15	5	8	12	7	6	3	13	10	12
Total each y'r	38	101	63	133	140	114	91	97	50	53	120

CHART No. 4.

CHART SHOWING RELATIONSHIP BETWEEN DEATHS FROM DIARRHOEA AND THE MEAN TEMPERATURE OF THE SOIL AT 4 FEET AND OF THE AIR AND ALSO LEVEL OF GROUND WATER DURING EACH WEEK IN 1904.



The ages at death of the fatal cases in each year from 1896 is shown in the following Table, where it will be seen that 67.5 per cent. of the cases last year were under one year of age.

AGE.	1896	1897	1898	1899	1900	1901	1902	1903	1904	Total
0 to 3 months	7	15	13	7	17	13	6	8	16	102
3 „ 6 „ „ ...	16	24	36	28	23	30	8	16	26	207
6 „ 12 „ „ ...	23	46	41	27	27	34	16	11	39	264
1 „ 2 years...	7	26	31	26	11	13	9	11	23	157
2 „ 3 „ „ ...	2	4	6	3	4	2	4	—	8	33
3 „ 4 „ „ ...	1	6	4	3	—	1	2	—	2	19
4 „ 5 „ „ ...	—	1	—	—	1	3	—	1	1	7
Over 5 „ „ ...	7	11	9	20	8	1	5	6	5	72
Totals ...	63	133	140	114	91	97	50	53	120	861

The number of deaths from Diarrhoea in each year bears distinct relationship to the meteorological conditions. This is seen in the appended chart (No. 4) which shows the weekly number of deaths from Diarrhoea with the corresponding air temperature, the temperature of the soil at 4 feet, together with the level of the subsoil water. It will be noted that the relationship of the number of deaths with the temperature of the soil at 4ft. was most marked. Diarrhoea became epidemic in the 4th week of July when the soil temperature reached 54°. The greatest number of deaths occurred in the 1st week of August, the soil temperature reaching its maximum in the 3rd week of the same month.

In young children the relationship between the method of feeding and the occurrence of infantile diarrhoea is close. Of the 81 children under one year who died from this cause, 30 only were breast fed while the remaining 51 were hand fed. In the 2009 visits last year paid by the women sanitary inspectors to births in the poorer parts of the town, where these deaths most

frequently occur, it was found that only 219 or 10.9 per cent.* of the children were hand fed. It therefore follows that in 1904 15% of hand fed children died from diarrhoea, while only 1% of the breast fed children died from the same cause. In the 51 hand fed infants who died of diarrhoea, 21 were fed on condensed milk, or some patent food, and 30 on cows' milk. There was no special incidence of the cases among the customers of any one milk supply 18 sources of milk being involved in the 30 fatal cases using cows' milk. Of the hand fed infants, in 25, feeding bottles with long rubber tubes were used, in 24, boat shaped bottles with no tubing were in use, while in 2 the infant was fed by a spoon.

A proper means of infant feeding is of the utmost importance in the prevention of this disease, and it is ignorance and carelessness in this particular that causes year after year the high infantile mortality from diarrhoea. Mothers milk is the natural food for the infant and every healthy mother ought to suckle her child. In those cases where artificial feeding is necessary properly prepared cows milk should only be used. It is now admitted by everyone who has carefully studied this subject that the best preparation of cows milk obtainable is that supplied now by numerous Corporations at their Infant Milk Depôts, and it is a matter for great regret that the people of St. Helens, which to its credit led the way in this direction, have not taken more advantage of the opportunities afforded them.

The women Sanitary Inspectors have continued the visitation of births, giving advice on Infant Hygiene, but it is extremely difficult to influence many of the women who regard the ideas and prejudices of the grandmother as of much greater value. During the autumn months when diarrhoea was prevalent, information and instructions on the subject were left at every house in the Borough. The teaching of hygiene to all children in schools, especially to the older girls, would do much to educate the people and destroy the ignorance and prejudice not only on the feeding of infants, but also of the advantages of cleanliness, fresh air, sunlight, and other general measures of sanitation, all of which have a bearing on the prevalence of diarrhoea.

*The large proportion of nursing mothers recorded for St. Helens is very satisfactory. McCleary has stated that "there is reason to believe that this function of maternity is undergoing atrophy in the women of modern civilisation. Professor Von Bunge who has devoted much attention to this subject believes that in the cities of Central Europe more than one half the mothers are physically incapable of suckling their infants. . . . In America Dr. Holt finds that incapacity to suckle is increasing and that in New York and its suburbs of those who have earnestly and intelligently attempted to nurse, not more than 25 per cent have been able to continue satisfactory for as long as three months." (Infantile Mortality page 38).

Influenza. Deaths, 15.

RECORD OF PREVIOUS YEARS.

1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
8	7	17	13	19	33	16	6	10	15

This disease was most prevalent in North Eccleston and South Windle wards where 4 and 3 deaths occurred respectively. All the deaths were those of persons between 25 and 85 years of age.

Puerperal Fever. Cases, 3 ; deaths, 1. Fatality per cent, 33.3.

RECORD OF PREVIOUS YEARS.

	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
Cases	17	11	19	7	9	15	16	14	6	3
Deaths	9	7	10	4	8	9	7	4	0	1
Fatality per cent.	53.0	63.6	52.6	57.1	88.8	60.0	43.7	28.5	0.0	33.3
*No. of births to each death ..	351	434	319	815	389	416	446	805	—	3321

*Not including still births, abortions, etc., which are occasionally followed by Puerperal Fever.

This is a disease with a very high fatality rate, but the cases are now much less met with than formerly. The Midwives Act will enable still further measures to be adopted in the prevention of this disease.

Erysipelas. Cases, 73 ; deaths, 1 ; Fatality per cent., 1.3.

RECORD OF PREVIOUS YEARS.

	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
Cases	69	137	162	173	121	138	106	109	61	73
Deaths	1	4	3	3	3	2	2	3	0	1
Fatality per cent.	1.44	2.91	1.85	1.73	2.47	1.44	1.88	2.75	0.00	1.36

The number of cases and deaths occurring last year was under the average of previous years. The cases occurring in each ward were as follows :— North Eccleston, 7 ; South Eccleston, 4 ; Central, 3 ; North Windle, 7 ; South Windle, 12 ; Hardshaw, 11 ; Sutton East, 15 ; Sutton West, 8 ; Parr, 6.

Erysipelas is not infectious in the same fashion as the other notifiable diseases, as it spreads specially where surgical cleanliness is not observed in wounds. It is usually frequent in an industrial town like St. Helens where minor accidents are numerous : the cases for several years past have been of a very mild character.

GENERAL AND LOCAL DISEASES.

The deaths occurring in the Borough during 1904 are set out on table VII, page 88, which shows the age periods and ward distribution of each disease. This section only deals with those diseases which call for special notice.

Phthisis Pulmonalis.—The total number of deaths arising from this disease last year was 140, an increase of 13 upon that of the preceding year.

RECORD OF PREVIOUS YEARS.

1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	
DEATHS ..	128	130	117	112	120	146	114	143	127	140

The mortality rate for 1904 was 1.58 per 1,000.

The wards most affected were South Windle, North Eccleston, East Sutton and Hardshaw. The deaths from phthisis in West Sutton were almost wholly confined to the Asylum.

The great majority of the deaths occurred between 15 and 55 years of age, the largest number being recorded from 25 to 35 years; it is also to be noted that 15 deaths occurred from phthisis under one year.

DEATHS AT VARIOUS AGES.

Years ..	—1	—5	—10	—15	—25	—35	—45	—55	55—
Deaths ..	15	10	6	8	23	31	25	17	5

At the end of 1899 the Council decided to request the medical men of the Borough to notify cases of phthisis to the Health Department, paying them for so doing the ordinary notification fee. As a result of this the following cases have been notified:—

NOTIFICATIONS IN EACH YEAR.

1900	1901	1902	1903	1904
66	56	82	67	89

It is thus seen that only a very small number of the cases of phthisis come to the knowledge of the Local Authority during life, and it may be added that the notified cases are frequently found dying or dead when enquiries are made on receipt of the doctor's certificate. Of the 89 cases notified last year, 13 were in this condition when visited. Voluntary notification then does not seem to be an efficient means of obtaining information as to the existence of phthisis, and this arises from various causes. The public are very ignorant of the nature of this disease, regarding it with some degree of horror as a

hereditary one causing great destruction of life in certain marked families. This view is absolutely erroneous, and it is not too much to say that so common is phthisis that few families would be found free from it, if the correct history of each for two or three generations were known. The prejudice against the name of phthisis is strong amongst all but a few, and medical men generally are unwilling to notify in opposition to these sentimental objections. Some medical men have themselves objections to making a diagnosis of phthisis as they do not regard it as a disease with a possible cure and delay their diagnosis until a fatal issue is in sight ; this view is happily now much less common. Phthisis is a disease which depends for its spread or prevention to a great extent on the habits of the sufferer, and it is unreasonable to hope that the patient will carry out any precautions if he and his family do not recognise the nature of the illness from which he suffers. Infection is given off by the sufferer almost wholly by the expectoration, and it is to the disposal of this that attention ought to be chiefly directed. Public spitting is at all times an offensive practice, but indiscriminate expectoration by sufferers from phthisis ought not to be permitted. Notification should be made compulsory if there is a reasonable prospect of benefitting the public health, and this seems fairly well established. Phthisis is not quite comparable to the zymotic diseases, as it is infectious for a very prolonged and indefinite period, during a large part of which strict isolation is impracticable, and would if carried out be unnecessarily hard on the sufferer. Some degree of isolation however ought in all cases to be practised, and hospital isolation may in some be advisable for a time, as phthisis is certainly an infectious disease rather than a hereditary one. This is a disease which can be diagnosed with certainty in an early stage before much destruction of lung tissue has taken place when the patient first becomes infectious to his neighbours, and at a time when the greatest benefit is derived from treatment and from measures taken to prevent its further spread. The following are briefly the advantages of compulsory notification, apart altogether from possible hospital or sanatorium isolation or treatment. All cases of phthisis would become known to the Local Authority ; the sufferer himself would not remain in ignorance of his disease, and unknown cases would not be free to spread it. The public would come to recognise phthisis as an infectious disease, in which precautions against its spread are necessary. The Local Authority would be enabled to advise and enforce such isolation as may be practicable or necessary in each case, and could carry out disinfections after the removal of phthisical persons from house to house or on the occurrence of death. Far more efficient investigations could be made into the circumstances existing in each town under which this disease arises and spreads. Much

would depend on the early diagnosis of the disease, but there is reason to believe that the medical profession are resorting with greater frequency to the only method by which this can be arrived at—bacteriological examination of the sputum, which the Corporation of St. Helens have for many years offered to carry out free for the medical practitioners in the Borough.

The number of cases of phthisis investigated during the year was 89. In 37 of these there had been previous cases of phthisis in the family as a source of infection. In 13 instances the houses in which the cases occurred could not possibly afford a proper isolation of the case, which was in the circumstances constituting a grave danger to the other members of the family. In 37 cases the houses were ill-lighted and ill-ventilated; in six they were damp, while in 12, other defects were shown.

Other Tubercular Diseases.—The total number of deaths arising from these diseases was 51; this is an increase of 7 over that of the preceding year. The mortality rate from this cause for 1904 was .57 per 1000. The main diseases here included are Intestinal Tuberculosis and Tabes Mesenterica, which gave rise to 24 deaths, and Tubercular Meningitis, which gave rise to 16.

RECORD OF PREVIOUS YEARS.

	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
DEATHS ..	51	49	56	50	48	50	44	55	44	51

The wards most affected were North and South Eccleston, West Sutton and Parr.

Only 14 of the deaths were of persons over 2 years of age; six being over 5 years.

AGE INCIDENCE AT DEATH.

Years ..	—1	—5	—10	—15	—25	—35	—45	—55	55—
Deaths ..	23	22	4	—	—	1	—	—	—

It should also be remarked that only one death from intestinal tuberculosis occurred after the third year of life. As the infection in this disease is swallowed this fact has some interest in relationship to the feeding of infants and children.

Cancer and Malignant Diseases. From this cause death arose in 42 cases, an increase of 5 over the number recorded in the preceding year. The mortality rate for St. Helens for 1904 from these diseases was .47 per 1,000.

RECORD OF PREVIOUS YEARS.

	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
DEATHS ..	42	35	40	44	35	46	31	35	37	42

The mortality rate from these diseases shows a tendency to increase in most parts of the country. This increase is more apparent than real, being partly due to the better recognition of obscure cases and to methods of classification, but it probably does to some extent exist. Two of the deaths registered last year were from Sarcoma, and the remaining 40 were from Cancer. The ward most affected was East Sutton, where 12 deaths occurred. As cancer is a disease of later life, almost all the deaths occurred after 45 years of age; 22 of the deaths were among women and 20 among men.

DEATHS AT VARIOUS AGES.

Years	—35	—45	—55	—65	—75	75—
Deaths	0	4	10	14	10	4

In 34 of the deaths the internal organs were affected, in only 8 was the disease in the external tissues.

Respiratory Diseases.—The number of deaths from these diseases was 370, an increase of 6 over the previous year. This gives a mortality rate of 4.16 per 1000.

DEATHS IN PREVIOUS YEARS.

Years..	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
Bronchitis ..	164	171	186	169	213	219	163	214	189	184
Pneumonia ..	118	154	167	145	130	192	133	156	149	146
Others ..	62	31	22	18	36	28	30	32	26	40
Total ..	344	356	375	332	379	439	326	402	364	370

The wards most affected were South Eccleston, Hardshaw, and Parr.

DISTRIBUTION OF DEATHS FROM BRONCHITIS AND PNEUMONIA.

WARDS.	BRONCHITIS.							PNEUMONIA.						
	1898	1899	1900	1901	1902	1903	1904	1898	1899	1900	1901	1902	1903	1904
Eccleston, North ..	20	19	27	22	28	23	20	12	10	15	16	16	14	14
Eccleston, South ..	11	17	24	22	22	27	24	10	9	11	5	8	8	17
Central ..	24	40	29	27	28	27	15	5	7	16	12	18	6	3
Windle, North ..	16	8	19	7	18	18	10	15	9	15	6	12	14	19
Windle, South ..	16	19	19	19	14	9	11	11	14	10	14	6	13	17
Hardshaw ..	26	28	31	13	27	23	34	25	21	20	17	17	28	15
Sutton, East ..	12	26	10	20	25	25	20	10	24	30	20	32	28	23
Sutton, West ..	20	20	22	17	27	13	14	34	20	51	26	31	21	19
Parr ..	24	36	38	16	25	24	36	23	16	24	17	16	17	19

Deaths from Violence.—The total number of deaths from this cause was 50, as against 68 in the preceding year. This gives a mortatity rate for St. Helens of 0·56 per 1000 for 1904, compared with 0·57 for England and Wales generally. The deaths were accounted for as follows:—Accident or negligence, 46 ; Homicide, 1 ; and Suicide, 3.

The Coroner held during 1904, 61 inquests on the bodies of persons belonging to St. Helens, certifying the deaths.

Uncertified Causes of Death.—The deaths included in this class are those uncertified by either a registered medical practitioner or by the Coroner. The number of uncertified deaths registered in St. Helens during the past year was 97, being 5·4 per cent of the total deaths registered. In England and Wales during 1904 the percentage of uncertified deaths was 1·6 so that the proportion of these deaths in St. Helens is very large.

The Inter-departmental Committee on Physical Deterioration recommended that still births should be registered, and that medical certificates should be required in all deaths.

III.

General Sanitation.

GENERAL SANITATION.

HOSPITALS.

The Borough now possesses 156 beds in its two hospitals for the isolation of persons suffering from infectious disease. The commoner infectious diseases are treated at the Borough Sanatorium at Peasley Cross, where there is accommodation for 120 patients, while small-pox is treated in the Small-pox Hospital at Old Wint, where 36 patients can be isolated. The Sanatorium was well occupied during the whole year, and the Small-pox Hospital was in use from 6th January to 11th May. The total number of cases admitted to both hospitals was 456, of which 31 were admitted from the Urban District of Haydock.

The proportion of cases treated in hospitals last year was 56.3 per cent. of the cases notified, and the following statement shows the percentage of cases so treated during the last ten years.

PROPORTION OF CASES TREATED IN HOSPITAL.

Years	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
Percentage of Cases Notified..	40.2	18.3	20.1	32.0	50.5	47.5	56.9	49.3	55.6	56.3

The percentage of removals in each of the notifiable infectious diseases for last year is as follows:—Small-pox, 100 per cent.; Scarlet Fever, 77.6; Diphtheria, 9.4; Enteric Fever, 70.5. The figures, indicating a more efficient isolation of infectious disease are eminently satisfactory. The isolation of cases of Diphtheria has become possible owing to the recently increased accommodation at the Sanatorium, and this is now being taken advantage of. The hospital isolation of Erysipelas and Puerperal Fever is not, in most cases, necessary in the interests of public health.

In St. Helens, from the nature of the community, it is especially necessary to remove to hospital a large proportion of the cases of infectious disease, and it is gratifying to be able to report that very little difficulty is found in inducing all patients whose removal is desirable to go to the hospital. The development of hospital isolation in the town is well seen in

the following table, which gives the statistics since the Sanatorium was opened in 1881.

YEAR.	No. remaining in Sanatorium on Dec. 31.	Number Admitted	No. who died in Sanatorium.	Total Days in Sanatorium of Patients.	Accommodation.
1882	—	9	3	—	
1883	—	14	1	—	
1884	—	36	6	—	
1885	—	9	0	—	
1886	—	17	3	—	
1887	—	38	11	—	
1888	—	25	4	—	
1889	—	116*	15	—	
1890	—	128†	20	—	
1891	—	89	10	—	
1892	—	134	15	—	
1893	—	150	25	—	
1894	19	182	22	6184	
1895	44	259	54	8962	
1896	46	311†	15	16630	2 New Pavilions used in addition to above.
1897	36	263	24	12955	
1898	51	263	28	12742	Large Pavilion and Observation Block opened.
1899	37	401*	37	18049	
1900	88	445†	31	19203	
1901	73	620†	44	26255	
1902	99	753†	50	32879	
1903	77	617†	36	28067	
1904	63	456	28	22353	2 New Pavilions opened.

* Enteric Fever Epidemic

† Scarlet Fever Epidemic.

At the beginning of the year 77 patients were in the hospitals, and during the year 456 were admitted, making 533 under treatment. Of these 442 were discharged recovered, and 28 died, leaving 63 in the hospitals on December 31st.

ADMISSIONS, DISCHARGES AND DEATHS DURING 1904.

DISEASE.	Patients in Hospital on Jan. 1st.		Admitted.		Discharged recovered.		Died.		Remaining in Hospital on Dec. 31st.	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Small Pox ..	—	—	17	17	15	16	2	1	—	—
Scarlet Fever ..	34	37	169	178	174	181	8	8	21	26
Diphtheria ..	—	—	7	9	6	8	—	—	1	1
Enteric Fever ..	5	1	33	17	19	14	8	1	11	3
Other Diseases ..	—	—	1	1	1	1	—	—	—	—
Observation ..	—	—	—	—	—	—	—	—	—	—
Small Pox ..	—	—	4	1	4	1	—	—	—	—
Others ..	—	—	1	1	1	1	—	—	—	—
Totals ..	39	38	232	224	220	222	18	10	33	30
			77	456	442	—	28	—	63	—

The proportion of deaths among the patients discharged during the year was 5·95 per cent. compared with 5·61 in 1903. The general fatality rate depends largely on the proportion of the cases treated, as certain diseases have a much lower rate than others. In Small-pox 8·8 per cent. of the cases treated died ; in Scarlet Fever 4·31 ; in Enteric Fever 21·42, and in Diphtheria 0·0. These rates compare favourably with those usually recorded for each disease, and this is all the more satisfactory as it is frequently only the worst cases that are removed to hospital.

The total number of days spent in hospital by all the patients was 22,353 ; this gives an average duration of residence 48·5 days per patient. The figures for each disease is given in the following table :—

DISEASE.	Small Pox.	Scarlet Fever.	Diphtheria	Enteric Fever.	Oth'r Diseases (including observation cases).
Total duration of days in Hospitals ...	1291	18144	404	2315	199
Average duration in days per patient treated	37·9	52·2	25·2	46·3	22·1

On the 26th May the additions to the Borough Sanatorium at Peasley Cross, commenced in 1903, were formally opened by the Mayoress (Mrs. Massey). The extensions consisted of, one large pavilion, one small pavilion, discharging ward, and an addition to the administrative block, consisting of 16 bedrooms. These buildings have been erected on the most approved principles and are well constructed and of good appearance. They are built throughout of brick with Ruabon terra cotta facings. Each pavilion is provided with a glass verandah in front, the floors of which are formed of Stuart's Granolithic cement paving, the patients being thus able to sit outside in the warm weather. Both pavilions though different in size have similar arrangements. Internally the walls are plastered with Portland cement, all the corners being rounded off to prevent an accumulation of dust. All windows open at the top for ventilation, and each of the wards is provided with one fireplace and two double stoves. The bath rooms, lavatories, and water closets are at the extreme end of each ward, and open into a passage which provides for through ventilation. They contain in separate rooms one bath, one water closet, one slop water basin, and three wash hand basins. The floors of all wards, etc., are paved in oak with wood blocks. The entrance hall is lighted by means of a glass dome, and contains two small

closets for coal and stores. It is paved with marble mosaic with the St. Helens coat of arms in colours in the centre. The kitchen opening out from the hall is provided with hot and cold water, kitchen range and all necessary requisites. From this apartment a full view of each ward is obtained by means of a small window on either side provided for this purpose. An extra one bed ward also opens off the hall on each side, the doors being of such a size to allow of a bed being wheeled in from either of the wards. The wards are 26ft. wide and 13ft. high ; those in the large pavilion are 70ft. long and those in the small 40ft. The large pavilion gives accommodation to 26 patients, and the small pavilion to 14, each patient having an air space of 2,029 cubic feet.

In the discharging ward there are three rooms. The central one which communicates with the other two is fitted with two baths and other accessories ; one of the baths is an ordinary adult bath, and the second has been specially designed with higher supports for the bathing of children. One of the remaining rooms is the undressing room into which patients come from the wards and in which they leave their infected clothing ; the third room is the dressing-room where patients after bathing and disinfecting, dress in uninfected clothing before leaving the hospital.

The whole of the work was designed and carried out under the direction of Mr. Geo. J. C. Broom, the Borough Engineer.

Bacteriological Laboratory.—During the past year all the medical practitioners in the Borough were supplied with outfits for the transmission of specimens to the laboratory for bacteriological examination in cases of diphtheria, typhoid fever, and tubercle. The number of specimens received was 74, of which 36 proved positive and 38 negative ; the results were sent without delay to the medical men and proved of great value in several cases.

Disease.	Specimens Received.	Results.	
		Positive.	Negative.
Diphtheria ...	37	18	19
Typhoid Fever ...	31	16	15
Tubercle :—Sputum ...	4	1	3
Urine ...	2	1	1
 Total ...	74	36	38

In addition the mixed water of the Borough was examined bacteriologically from time to time. In the five examinations made, the average number of bacteria found per cubic centimetre was 26, all of which were harmless water organisms.

HOUSING.

The number of inhabited houses in the County Borough of St. Helens as given in the Census return of 1901, was 15,122. Between 1891 and 1901 very considerable improvement had taken place in the housing of the population, the decrease in the number of one and two roomed houses and of their occupants amounting to nearly 50 per cent.

HOUSES AND OCCUPANTS.

Number of Rooms.	Census 1891.		Census 1901.	
	Houses.	Occupants.	Houses.	Occupants.
1	120	265	64	150
2	1123	4801	658	2554
3	921	4978	966	4978
4	5488	29492	6544	34641
More than 4 rooms	4704	31752	6890	42087

In St. Helens then only 0.4% of the families live in one roomed houses, whereas in Dublin 36%, in Glasgow 24%, and in London and Edinburgh 14% live in houses of this size.

The number of inhabited houses in St. Helens at the end of last year was 17690; the number built during the year was 395. Three representations were presented to the Health Committee, certifying that certain houses in Pocket Nook Street, Dale Street, Stone Street, and Mertonbank Road were in a state so dangerous to health as to be unfit for human habitation. The number of houses involved was 67, and of these 17 have been closed during the year, and the remaining 50 were ordered to be closed in the current year.

The number of notices served by the Department for house improvement was 1,214, and for the improvement of sanitary conveniences 1,752. In many instances improvements were carried out by bringing the matters personally before the parties concerned without the service of a notice. The number of notices served for overcrowding was 10, and the number served for cleansing of the house was 76; here also much was done by the Inspectors personally, and in only exceptional cases was a notice served.

Common Lodging Houses.—The number of these registered is 11, as against 13 in 1903. These contain 77 sleeping rooms and give accommodation to 330 adults. One new common lodging house was registered during the year. None of the houses have been built as Common Lodging Houses, and with one or two exceptions they are all structurally defective, especially those in Greenbank.

The common lodging houses were inspected regularly from time to time by the Inspectors, close vigilance being especially kept over them during the period of the prevalence of Small-pox, a daily return of all persons lodging in each house being obtained during this time. All the common lodging houses were limewashed in April and October.

FOOD SUPPLIES.

Milk.—The total number of cowsheds in use within the Borough at the end of 1904 was 41; 2 were registered during the year, and 3 ceased to be used. These premises were inspected periodically by the District Sanitary Inspectors, and it was necessary to serve three statutory notices for cleansing. Overcrowding has been the subject of communication with two occupiers, and it is hoped that improvements will be carried out. It is unfortunate that the duty of carrying out structural improvements falls upon the tenant, who can only reap from such, a temporary benefit, and dairy farmers should never enter on a fresh lease without communicating with the Sanitary Authority as to the suitability of the premises. The number of milk cows in St. Helens is 317, but this is only a small proportion of those supplying the town with milk. The veterinary inspector examined all cows in the Borough during the year in order to detect the existence of tubercular disease of the udder. All were apparently healthy except three from which samples of milk were taken for further investigation. Bacteriological examination in these, however, failed to reveal the

presence of tubercle bacilli. The number of persons registered as purveyors of milk exclusive of cowkeepers at the end of 1904 was 104; during the year 12 were added and 13 ceased business. The premises were frequently inspected, but many, especially of the smaller milkshops, are by no means satisfactory.

Infant Milk Depot.—This institution, although it has not been extensively patronized has continued to do good work. It is not seriously denied that the best way of preventing the ever recurring epidemics of diarrhoea, which play such havoc among the bottle-fed infants, is by supplying them with a clean food suited to their digestion. Ordinary milk collected and stored as it usually is, does not supply this article, and the patent foods on the market are even worse.* It is conceded by all the medical profession with rare exceptions, that sterilized and humanized milk, whether obtained municipally or otherwise, is the only practical safeguard for hand-fed infants known in the present day. There are probably not more than 450 hand-fed babies in the borough, but the mothers of little more than a third of these found their way to the Depot. The Depot has been kept prominently before the people during the past year, and it is difficult to explain why more did not take advantage of it. The local Trades Council were interested in the matter, and kindly endeavoured to further popularize the institution.

The number using the milk continuously in 1904 was 160, but there were 61 others supplied for short periods from 1 to 14 days. More than one-half—86 out of 160 infants—when first brought to the depot, were suffering from gastro-intestinal disorders as a result of hand-feeding.

Among infants using the milk the death rate in 1904 was only at the rate of 68 per 1,000, as against 54 last year, while the infantile rate for the Borough as a whole was 174 per 1,000. There has thus been a saving of life equal to 106 deaths of infants per 1,000 births. The deaths among the infants using the milk included 2 from congenital debility, 2 from tubercular diseases, 2 from diarrhoea, 1 from measles, 1 from bronchitis, and 3 from other diseases.

*Professor Rotch, in "Pediatrics—The Hygienic and Medical Treatment of Children" says:—"It is high time for physicians to appreciate exactly how inefficient in themselves, and how misleading in their claims, are these artificial foods, and also in what a false position, as the protector of and advisor to the public, our profession is placed whenever it lends itself to even a toleration of their use. I speak of them here simply because there is no doubt that they are kept in the market by the physician rather than by the manufacturer. The latter is only doing what any capitalist interested in a business venture would do. The former, it seems to me, is, perhaps unintentionally, aiding the business interests of others at the expense of his own future reputation as a scientist."

YEAR.	No. of Children on books.	Death-rate per 1000 among children at Depôt.	Infantile Death-rate.
1899	232	103	157
1900	332	102	188
1901	282	106	175
1902	200	82	167
1903	183	54	137
1904	160	68	174

By analysing the above figures it will be found that had the ordinary death rate in the Borough in each year occurred among the users of the milk, the deaths for these six years would have been increased by 109; in other words there are 109 children living now in the town who would have been dead but for the infant milk depot. The gain to the Borough is really far more than 109 lives, as the users of the milk were all hand-fed infants, many of whom were ill on coming to the Depot, among whom the death rate is much higher than that of the infants generally.

The ages of the children when first brought to the Depot were as follows:—Under 1 month, 48; between 1 and 2 months, 28; between 2 and 3 months, 28; between 3 and 6 months, 39; and over 6 months, 17. Of those under one month old, 14 were under one week when first fed.

The difficulty of distribution, which is felt in almost all the other towns with Depots has still to be settled. The Dairymen's Association was approached in the matter, but unfortunately without result, and the subject is still under consideration.

The following is a statement of the cost up to date:—

<i>Current Expenditure</i> —	1900-1901.	1901-1902.	1902-1903.	1903-1904.	1904-1905.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Wages for Attendance ..	115 11 5	119 2 2	116 7 9	108 13 11	98 13 6
Milk	272 9 2	185 5 10	185 13 4	123 19 2	105 5 5
Rent of House & Rates..	18 0 0	18 0 0	21 15 0	22 3 11	22 10 5
Sugar	8 6 6	14 2 6	16 6 6	9 2 0	7 11 0
Fuel, Gas and Water ..	9 4 0	9 19 10	15 4 8	12 2 8	12 1 0
Sundries	21 13 5	22 19 6	22 16 1	25 11 7	25 11 9
Renewal of Bottles, &c..	25 18 8	33 6 5	62 1 2	24 14 2	27 18 0
	471 3 2	402 16 3	440 4 6	326 7 5	299 11 1
Income from sale of Milk	328 9 5	245 16 3	208 16 8	139 13 8	123 7 6
Amount falling on Rates	£142 13 7	£157 0 0	£231 7 10	£186 13 9	£176 3 7

Thus it will be seen that the cost to the town has been very small, and has been more than repaid by the benefits which have accrued.

Meat.—At the end of 1904 there were in addition to the Public Abattoir, 11 Licensed Private Slaughter Houses in the Borough—9 for cattle and pigs and 2 for pigs only. The number of butchers slaughtering in licensed premises in the Borough, outside the Public Abattoir, was 16. The facilities for pig killing at the Public Abattoir were under consideration by the Health Committee, and were considerably improved. As far as possible all the carcases of animals slaughtered in the Borough were examined by the meat inspector before being exposed for sale. This work is easily carried out at the Public Slaughter House, but cannot be so efficiently performed in the case of private ones. Although the latter were very frequently inspected, no suspicion of traffic in unsound cattle has been aroused. Shop inspection was carried out regularly, and in only one instance was any suspicious meat discovered. The occupier of the shop appeared to be acting in good faith, but the meat was taken before a magistrate for condemnation. In all other instances the food was destroyed with the consent of the owner, but owing to a dispute as to ownership in one case it was necessary to have the meat condemned by a magistrate also.

The number of animals slaughtered in St. Helens during 1904 was 15,854; of these 11,457 were killed in the Public Abattoir and 4,397 in licensed private slaughter houses.

ANIMALS SLAUGHTERED IN ST. HELENS SINCE 1896.

ANIMALS KILLED.	1896	1897	1898	1899	1900	1901	1902	1903	1904
No. of Beasts killed within the Borough in public and private slaughter houses for market purposes ..	3397	2852	3088	3416	3647	3318	4937	3229	3049
No. of Sheep	3420	4487	3520	3048	3537	3780	3957	3288	3747
No. of Calves	459	427	443	401	413	338	451	343	329
No. of Pigs	7338	6384	5957	6594	7748	6810	7899	8942	9729
Total	14614	14150	13008	13459	15345	14246	17244	15802	16854
Beasts killed in the Corporation slaughter house, which are included in the above number	6520	6520	7430	7550	9597	8957	11381	9867	11457

CATTLE BEASTS SLAUGHTERED SINCE 1895.

		Public Abattoir.		Private Slaughter Houses.
1895	...	1226	...	2026
1896	...	1763	...	1634
1897	...	1976	...	879
1898	...	2465	...	623
1899	...	2682	...	734
1900	...	3131	...	516
1901	...	2690	...	628
1902	...	4140	...	797
1903	...	2710	...	519
1904	...	2533	...	516

Unsound Food seized or given up during the year ending December 31st, 1904.

22 Carcasses of Beef and Offal affected with Tuberculosis.

5 Carcasses of Pork and Offal do.

1 Carcase of Veal and Offal do.

271 Pairs of Beasts Lungs do.

113 Beasts Hearts do.

71 Beasts Livers do.

48 Beasts Rumen and Intestines do.

64 Beasts Udders do.

41 Sets of Pigs Offal do.

3 Carcasses of Beef and Offal permeated with Medicine.

1 do. insufficiently bled.

2 do. emaciated.

7 Carcasses of Pork and Offal suffering from Swine Erysipelas.

1 Carcase do. emaciated.

2 do. insufficiently bled.

28 Pairs of Beasts Lungs infested with Cysts.

5 Pairs do. infested with Flukes.

12 Beasts Livers infested with Cysts.

7 do. infested with Flukes.

12 Beasts Udders affected with Mastitis.

23 Pigs Livers affected with Cirrhosis.

6 Pairs of Pigs Lungs affected with Pneumonia.

275 lbs. Beef and Mutton, Putrid.

18 Boxes of Kidneys, do.

37 Couple of Rabbits do.

1 Barrel and 244 Boxes of Fish, Putrid.

Food and Drugs.—Under the Food and Drugs Act, 200 samples were taken and submitted to the Public Analysts for analysis. Three of these samples were reported as not genuine, and 10 of the others as of poor quality. Where the samples were not genuine, in one case legal proceedings were taken, which were dismissed on the defendant agreeing to pay costs, and in the other two, as the full formalities had not been followed in taking the samples, no proceedings were taken, but the vendors were cautioned, and subsequent samples taken from the same sources were reported genuine.

REPORT OF THE PUBLIC ANALYST FOR 1904.

The following Table shows the work done by the Public Analyst during the year 1904.

Name of Sample Analysed.	Number of Samples Analysed.	Number of such Samples which were found to be genuine.	Number of such Samples which were found to be adulterated.	No. of Cases in which a Summons was taken out.
New Milk	92	91	1	Case dismissed on payment of costs.
Butter	73	71	2	—
Cheese	18	18	—	—
Beer	10	10	—	—
Porter	7	7	—	—
Totals	200	197	3	1

APPENDED IS A TABLE SHOWING THE NUMBER OF SAMPLES SUBMITTED FOR ANALYSIS SINCE 1895, THE NUMBER OF SUCH SAMPLES WHICH WERE ADULTERATED, AND THE PERCENTAGES OF ADULTERATED SAMPLES DURING THE YEAR.

Water Supply.—Analyses were made of St. Helens water in August and November, and on each occasion the results showed the water to be of great purity. Samples have been taken from the softening works daily, and tested as to their hardness. Each sample is obtained by allowing the softened water to drop for twenty-four hours into a glass vessel. At the end of this time the contents are well mixed, and the sample taken. In this way a true sample is obtained.

	No. of Samples Tested.		Mean Hardness.
January	31	...	10·1
February	29	...	10·0
March	31	...	10·0
April	30	...	10·0
May	31	...	10·0
June	30	...	9·8
July	31	...	10·2
August	31	...	10·3
September	30	...	10·4
October	31	...	10·2
November	30	...	10·4
December	31	...	10·3

Total 366 Mean for the year = 10·1.

The average hardness of the unsoftened water was 22·2.

FACTORIES AND WORKSHOPS.

The number of workshops on the Register at the end of the year was 170. A large amount of work was done in the inspection of these places, the details of which are set out afterwards in tabular form. No notices were received from the Factory Inspector of commencement to occupy a factory or workshop, and none of sanitary defects. The number of new workshops notified by this department to the Home Office was 10, and of workshops given up 15. The standard of 250 cubic feet of air space per head was well recognised, but the workers themselves show an indifference in using the means of ventilation provided. It was generally found that the workshops were kept in a clean condition, and it was only necessary to serve 31 notices.

Employers did not make their return of home workers with punctuality, and were called upon by letter to do so. Under the Factory and Workshops Act employers are bound, under a penalty, to make these returns at the stated times, February and August.

There are 97 bakehouses in the Borough, 3 of which are underground. The number of notices served was 21, all of which were complied with.

FACTORIES, WORKSHOPS, LAUNDRIES, WORKPLACES, and HOMEWORK.

1.—INSPECTION.

Including Inspections made by Sanitary Inspectors or Inspectors of Nuisances.

Premises.	Number of		
	Inspections.	Written Notices.	Prosecutions.
Factories	—	—	—
(Including Factory Laundries.)			
Workshops	588	31	—
(Including Workshop Laundries.)			
Workplaces	11	—	—
Homeworkers' Premises ...	13	1	—
Total	612	32	—

2.—DEFECTS FOUND.

Particulars	Number of Defects.			Number of Prosecutions.
	Found.	Remedied.	Referred to H.M. Inspector.	
<i>Nuisances under the Public Health Acts :—</i>				
Want of Cleanliness	19	18	—	—
Want of Ventilation	—	—	—	—
Overcrowding	3	3	—	—
Want of drainage of floors	—	—	—	—
Other Nuisances	6	5	—	—
Sanitary accommoda- { insufficient	1	1	—	—
tions { unsuitable or defective ..	—	—	—	—
not separate for sexes ..	1	1	—	—
<i>Offences under the Factory & Workshop Act :—</i>				
Illegal occupation of underground bake- houses (S. 101)	—	—	—	—
Breach of special sanitary requirements for bakehouses (Ss. 97 to 100). ..	2	2	—	—
Failure as regard list of outworkers (S. 107)	—	—	—	—
Giving out work { unwholesome (S. 108) to be done in per- { infected (S. 110) ..	—	—	—	—
Allowing wearing apparel to be made in premises infected by scarlet fever or small-pox (S. 109). ..	—	—	—	—
Other Offences	—	—	—	—
Total	32	30	—	—

3.—OTHER MATTERS.

Class.							Number.
Matters notified to H.M. Inspectors of Factories :—							
Failure to affix Abstract of the Factory and Workshop Act (S. 133)							—
Action taken in matters referred by H.M. Inspectors as remediable under the Public Health Acts, but not under the Factory Acts (S. 5)	Notified by H.M. Inspector ..						—
Other							—
Underground Bakehouses (S. 101) :—							
In use during 1903							3
Certificates granted { in 1903							—
{ in 1904							—
In use at the end of 1904							3
Homework :—							Number of
<i>List of Outworkers</i> :— (S. 107) :—							
Lists received							Lists. Outworkers.
							4 11
Addresses of outworkers { forwarded to other Authorities							1
{ received from other Authorities							—
<i>Homework in unwholesome or infected premises</i> :—							
Notices prohibiting homework in unwholesome premises (S. 108)							—
Cases of infectious disease notified in homeworkers' premises							—
Orders prohibiting homework in infected premises (S. 110)							—
Workshops on the Register (S. 131) at the end of 1904							
Workshops							170
Bakehouses							97
Total number of workshops on Register							267

4.—WORKSHOPS CLASSIFIED ACCORDING TO THE INDUSTRY.

Dress and mantle making...	49	Flour Packing ...	...	1
Milliners	18	Herbal Brewers ...	...	2
Tailors... ..	12	Pearl Ash Manufacturers ...	...	1
Stocking Knitters ..	8	Seltzogene Charge Makers...	...	1
Joiners, Builders, Cabinet-makers, Plumbers, &c. } 17		Tea Wrappers ...	...	1
Blacksmith, Wheelwright, Coach Builders, &c. } 10		Drysalter ...	...	1
Clogger and Boot Repairs..	46	Bottling Stores ...	...	1
Tinsmiths	1	Lead Light Maker ...	...	1
				170

MISCELLANEOUS.

School Hygiene.—All the public elementary schools were visited from time to time during the year to enquire into the prevalence of disease amongst the scholars, particularly the non-notifiable infectious diseases and skin diseases, and to gain information as to the personal condition of the children when sent to school with regard to cleanliness, clothing and general nutrition. These visits to schools were followed by enquiries at the homes of the children to whom attention had been called, and proved a valuable means of gaining information and dealing with the conditions of cases which would otherwise have been unattended to. In this work the department received great help from the school attendance officers and school teachers, who reported readily cases of measles, whooping cough, chicken pox, dirty children, children infested with animal parasites or with skin eruptions, and defective children either physically or mentally. The female sanitary inspectors chiefly undertook these duties, and paid 181 visits to the schools alone, the Medical Officer visiting in cases of difficulty. The importance of the teaching of hygiene in schools has recently been brought specially before the country by the Recommendations of the Inter-departmental Committee on Physical Deterioration. The Committee were impressed by the enormous sacrifice of infant life due to insufficient or improper feeding, and stated that the ultimate remedy lay in social education, and in the systematic instruction in continuation classes of girls in the processes of infant feeding and management. They recommended that instruction in cookery, hygiene, and domestic economy should be made compulsory on the elder girls at school, and that hygiene in its various branches should be made an essential element in the course of training for all teachers. They advocate that the systematic training of teachers to enable them to give rational instruction in schools on the laws of health, should include the demonstration of the physical evils caused by alcohol. From the information submitted in Part II. of this report, regarding the prevalence of disease, especially Measles and Whooping Cough, among infants, it would seem that the time has now arrived when children under the age of 5 years should not be taken into school, and it is a matter for the consideration of the Health and Education Committees what steps should be taken to bring this about.

Midwives' Act.—Notice of the effect of this Act was given during the year to all the midwives known to be practising in St. Helens. A complete list of these persons—53 in number—was prepared, and they were advised as to the steps to be taken for registration under the new Act. Of the 53 midwives, 20 possess a Certificate in midwifery granted after a proper training and examination, while the remaining 33, while possessing no such

BLACK SMOKE OBSERVATIONS 1904.

MINUTES OF BLACK SMOKE IN EACH OBSERVATION.

The duration of each observation was thirty minutes.

certificate, could be registered as possessing the necessary experience. From a careful estimate got from each midwife, it was found that in over 90 per cent. of the births in the town they were in attendance, and that in 40 to 50 per cent. they were present alone. The Act comes into force on the 1st of April, 1905, and will it is hoped do a great amount of good in regulating the practice of midwifery by midwives.

Black Smoke.—The method of timing recorded in previous years was continued, each chimney being observed for half-an-hour. All cases in which black smoke was emitted continuously for a longer period than five minutes were reported to the Health Committee. Notices were sent to the firms offending, and in most cases an assurance was got that everything would be done to prevent the recurrence of the nuisance. In the large majority of cases black smoke was emitted under ten minutes continuously, but in two cases the black smoke issued for the whole half hour. The average amount of black smoke was 5·2 minutes per observation of 30 minutes.

The total number of observations taken was 501, and 85, or 16·9 per cent, were found to have exceeded the five minutes limit. The number of chimneys observed was 106, and the number found to be offending at one time or other was 33, or 32 per cent. The details of each observation is set forth in the attached table. It will be seen that nine chimneys (Nos. 12, 21, 30, 31, 38, 43, 55, 80, 93.) which were timed on at least three occasions were regular offenders against the time limit fixed by the Committee. The Report of the Physical Deterioration Committee stated that “a stricter enforcement of the law, and a change in legislation, giving higher penalties, would produce a great improvement, without imposing any serious burden on manufacturers. It should also be considered whether the responsibilities of the ordinary householder in regard to domestic smoke pollution, might not be brought home to him.”

Offensive Trades.—The premises where these trades are carried on have been systematically visited during the year. There are ten offensive trades established with the sanction of the Local Authority ; they are 4 Tripe Boilers, 1 Gut Scraper, 2 Manure Manufacturers, 1 Soap Boiler, 1 Fat Boiler, 1 Bone Boiler.

WEEKLY RECORD OF METEOROLOGICAL CONDITIONS TAKEN AT VICTORIA PARK.

WEEK ENDING.	Mean Barometer.	WIND												Force of Wind.		
		Direction of Wind.								Number of Hours per Week.						
		North	NE	East	SE	South	SW	West	NW	Total Mileage	Max. mileage per hour.	Max. Gust.				
		ins.	°	°	°	°	ins.	°	°	°	°	°				
		Mean	Maximum	Minimum	Mean	Mean	Soil	Temp.	Temp.	Temp.	Temp.	Temp.	(4 feet.)	Rainfall	(total in.)	
		Barometer.	Temp.	Temp.	Temp.	Temp.	Temp.	Temp.	Temp.	Temp.	Temp.	Temp.	(4 feet.)			
Jan. 2	29.828	40.0	22.0	32.7	44.8	°	°	°	°	°	°	°	°	1833	18	31
.. 9	29.618	47.0	30.5	39.0	44.1	°	°	°	°	°	°	°	°	1670	20	32
.. 16	29.230	52.0	33.0	41.4	43.1	°	°	°	°	°	°	°	°	2717	36	57
.. 23	30.267	47.5	26.0	40.5	42.8	°	°	°	°	°	°	°	°	1320	18	29
.. 30	29.580	53.0	28.0	40.2	43.0	°	°	°	°	°	°	°	°	1746	20	34
Feb. 6	29.104	42.0	33.0	37.8	43.4	°	°	°	°	°	°	°	°	1451	18	30
.. 13	28.880	47.0	30.0	38.6	43.5	°	°	°	°	°	°	°	°	1824	28	53
.. 20	29.177	51.0	29.0	37.6	43.5	°	°	°	°	°	°	°	°	1546	32	43
.. 27	29.811	53.0	32.0	39.7	43.5	°	°	°	°	°	°	°	°	1778	32	48
Mar. 5	29.882	41.5	25.0	34.8	43.0	°	°	°	°	°	°	°	°	1830	18	36
.. 12	29.787	52.0	27.0	38.3	42.8	°	°	°	°	°	°	°	°	1398	20	30
.. 19	29.678	52.4	29.0	41.1	42.8	°	°	°	°	°	°	°	°	1094	12	23
.. 26	29.942	55.0	30.8	42.1	42.8	°	°	°	°	°	°	°	°	1779	30	42
Apl. 2	29.533	50.0	30.0	40.8	42.8	°	°	°	°	°	°	°	°	2016	26	45
.. 9	29.604	57.0	37.0	46.4	42.8	°	°	°	°	°	°	°	°	3185	36	57
.. 16	29.454	60.0	37.0	47.5	42.8	°	°	°	°	°	°	°	°	1742	34	49
.. 23	29.844	62.0	36.0	48.7	42.9	°	°	°	°	°	°	°	°	1187	18	35
.. 30	29.845	58.0	39.0	50.1	43.7	°	°	°	°	°	°	°	°	2185	36	44
May 7	29.634	58.0	41.0	48.7	44.1	°	°	°	°	°	°	°	°	1784	30	44
.. 14	29.700	65.0	34.0	48.8	45.0	°	°	°	°	°	°	°	°	1283	20	36
.. 21	29.817	70.0	36.0	52.0	46.8	°	°	°	°	°	°	°	°	1126	20	28
.. 28	29.725	72.0	41.0	53.9	46.5	°	°	°	°	°	°	°	°	1104	12	24
June 4	29.942	67.0	43.0	55.5	47.2	°	°	°	°	°	°	°	°	1236	22	45
.. 11	29.941	75.0	46.0	57.4	49.0	°	°	°	°	°	°	°	°	1933	20	33
.. 18	29.746	62.0	48.0	58.4	50.1	°	°	°	°	°	°	°	°	1814	20	38
.. 25	29.860	67.5	48.0	56.4	51.1	°	°	°	°	°	°	°	°	1656	20	31
July 2	29.776	75.0	48.0	59.7	51.8	°	°	°	°	°	°	°	°	1482	20	34
.. 9	29.898	75.0	46.0	58.0	52.4	°	°	°	°	°	°	°	°	1737	18	24
.. 16	29.887	81.0	49.0	65.2	52.8	°	°	°	°	°	°	°	°	1866	20	30
.. 23	29.906	77.5	43.0	62.7	54.5	°	°	°	°	°	°	°	°	902	20	28
.. 30	29.632	77.0	54.0	63.2	56.1	°	°	°	°	°	°	°	°	1482	20	34
Aug. 6	29.841	83.0	51.0	64.7	57.8	°	°	°	°	°	°	°	°	1606	30	49
.. 13	29.863	68.0	46.0	57.2	58.0	°	°	°	°	°	°	°	°	1908	20	34
.. 20	29.663	69.0	46.0	57.3	58.2	°	°	°	°	°	°	°	°	2133	30	46
.. 27	29.842	63.0	43.0	53.8	57.9	°	°	°	°	°	°	°	°	1886	22	34
Sept. 3	29.810	78.0	48.0	51.9	57.6	°	°	°	°	°	°	°	°	1738	22	38
.. 10	29.798	68.0	43.0	57.0	57.3	°	°	°	°	°	°	°	°	2117	22	38
.. 17	29.827	68.0	41.0	55.0	56.8	°	°	°	°	°	°	°	°	1884	28	41
.. 24	30.051	69.0	43.0	56.3	56.5	°	°	°	°	°	°	°	°	2252	20	30
Oct. 1	29.783	64.0	39.0	52.6	56.1	°	°	°	°	°	°	°	°	1495	22	32
.. 8	29.749	60.0	32.5	49.5	55.0	°	°	°	°	°	°	°	°	2326	40	63
.. 15	30.042	61.0	35.0	48.3	54.3	°	°	°	°	°	°	°	°	1442	14	25
.. 22	29.829	62.0	42.0	53.7	53.8	°	°	°	°	°	°	°	°	1562	26	40
.. 29	29.948	59.0	37.0	48.9	53.7	°	°	°	°	°	°	°	°	1644	22	38
Nov. 5	30.074	55.5	44.0	50.1	53.3	°	°	°	°	°	°	°	°	2027	34	38
.. 12	29.639	58.0	37.5	46.9	52.7	°	°	°	°	°	°	°	°	2793	36	56
.. 19	30.186	54.0	35.0	43.1	51.0	°	°	°	°	°	°	°	°	1507	20	31
.. 26	29.496	48.0	19.0	34.0	48.1	°	°	°	°	°	°	°	°	1911	28	44
Dec. 3	29.636	52.0	20.0	38.4	46.0	°	°	°	°	°	°	°	°	2300	19	24
.. 10	29.242	56.0	28.0	40.6	46.0	°	°	°	°	°	°	°	°	2067	28	38
.. 17	29.514	57.0	29.0	40.5	46.0	°	°	°	°	°	°	°	°	2099	26	46
.. 24	30.153	56.0	24.0	34.2	46.0	°	°	°	°	°	°	°	°	1402	14	27
.. 31	29.935	54.0	29.0	38.8	46.0	°	°	°	°	°	°	°	°	1873	42	52
Totals						32.15	397	228	1208	1527 $\frac{1}{2}$	1063	978	1442	1591 $\frac{1}{2}$	Highest readings	
Mean	29.744	60.4	36.6	48.1	44.4									3185	42	63

RAINFALL

AT ECCELESTON HILL WATER WORKS FOR 30 YEARS.

	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884
January ..	*	1.70	1.70	3.54	*	.49	.08	2.72	2.58	3.51
February ..	*	3.60	4.50	1.77	*	.80	4.17	1.73	3.38	2.33
March ..	.63	2.34	2.43	1.13	1.42	1.37	2.41	2.15	.53	2.49
April ..	.34	3.25	3.13	2.20	1.14	.66	1.23	4.06	1.09	1.07
May ..	2.30	.42	2.69	4.34	1.58	1.90	3.35	1.71	.68	0.82
June ..	3.80	2.61	1.07	3.32	3.10	2.15	2.60	6.07	2.90	2.11
July ..	3.26	2.74	5.32	1.40	4.53	5.82	3.47	5.27	3.32	3.30
August ..	3.35	3.50	6.16	4.87	5.15	2.38	6.60	4.41	2.25	2.02
September ..	5.65	3.96	3.01	5.06	3.77	2.90	2.46	3.10	6.41	3.69
October ..	5.81	2.90	3.46	3.94	2.07	3.13	3.14	3.00	5.81	1.49
November ..	4.10	4.96	2.50	3.94	.64	2.03	2.91	3.43	2.60	1.57
December ..	.78	4.38	2.90	*	.61	6.16	4.3	2.12	1.65	3.12
Totals ..	30.02	36.36	38.87	35.51	24.37	29.79	36.72	39.77	33.20	26.92

* Gauge broken.

	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894
January ..	1.78	3.99	0.98	0.93	0.65	3.17	1.01	1.80	0.89	1.87
February ..	2.35	0.80	0.61	0.61	1.53	0.19	0.08	1.54	3.07	4.02
March ..	1.94	1.84	1.33	1.89	1.27	2.28	0.76	0.73	0.77	2.21
April ..	1.38	1.12	1.06	1.09	1.92	1.31	1.95	1.15	0.39	1.59
May ..	2.14	4.25	2.03	0.66	2.47	1.58	2.13	3.36	1.30	2.48
June ..	3.32	1.68	0.91	2.54	0.35	2.27	3.39	4.08	1.74	2.23
July ..	1.91	3.03	1.17	6.87	2.98	2.43	3.26	3.20	3.32	3.66
August ..	1.98	1.74	1.50	3.31	4.75	3.67	6.50	4.15	2.79	4.77
September ..	4.58	3.47	5.36	1.56	2.25	1.48	2.92	3.80	3.85	0.72
October ..	5.99	4.05	2.37	1.85	2.84	2.09	3.49	6.25	2.18	3.79
November ..	3.18	3.04	1.17	4.98	2.49	6.41	2.92	2.44	1.88	2.56
December ..	2.18	4.00	2.61	1.89	2.39	0.14	3.93	1.96	3.55	3.44
Totals ..	32.73	33.01	21.10	28.18	25.89	27.02	32.34	34.84	25.73	33.34

	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
January ..	2.06	1.13	1.11	2.05	3.84	4.29	2.13	0.36	2.36	2.55
February ..	0.04*	1.54	2.35	1.91	1.82	2.65	1.08	1.51	1.97	3.17
March ..	0.89	2.94	2.09	0.73	2.34	*	1.56	2.03	2.11	1.25
April ..	1.74	1.48	2.27	1.40	3.27	1.53	2.14	1.96	1.86	1.36
May ..	0.54	0.51	1.33	3.88	3.28	1.36	0.78	3.82	3.21	1.92
June ..	0.82	3.83	3.52	2.87	2.03	2.36	1.72	1.49	1.79	1.96
July ..	3.72	1.92	1.15	0.52	2.37	0.93	1.40	1.75	4.16	0.76
August ..	3.31	3.18	4.88	4.54	1.49	5.67	2.78	2.51	4.43	4.28
September ..	1.17	6.28	4.90	1.28	4.17	0.83	0.95	1.18	4.68	2.56
October ..	5.13	3.18	1.88	4.55	3.03	3.66	3.68	3.39	7.70	1.86
November ..	2.65	1.31	4.61	2.42	0.56	3.31	3.42	1.95	3.60	1.28
December ..	2.88	4.56	3.99	2.84	1.89	2.96	3.86	2.26	1.47	2.27
Totals ..	25.35	31.86	34.08	28.99	30.09	29.55	25.50	24.21	39.34	25.22

* Rain Gauge out of order.

WORK OF THE NUISANCE INSPECTORS DURING 1904.

District Inspectors.—In addition to the work in connection with infectious disease prevention, and various other matters already reported on systematic house-to-house inspections were carried on during the year. The insanitary conditions thereby discovered were frequently removed on them being first pointed out, but it became necessary to serve 3,454 notices upon the persons interested to have these nuisances abated.

SANITARY NOTICES.

NUMBER OF SANITARY NOTICES SERVED.	1896	1897	1898	1899	1900	1901	1902	1903	1904
To Clean Choked Drains and W.c.'s ..	230	291	193	285	331	361	375	146	346
,, Repair or Re-lay Defective Drains ..	66	87	167	209	250	241	57	157	73
,, Drain Dwelling-Houses	7	5	15	11	3	6	4	7	5
,, Disconnect and Ventilate Drains ..	..	..	84	210	270	228	253	393	107
,, Disconnect Downspouts	8	19	60	144	109	175	33	95	45
,, Repair or Lengthen W.P. to Slopstones	52	49	53	67	94	85	54	51	60
,, Provide W.P. to Slopstones .. ..	..	12	29	46	40	35	25	22	29
,, ,,, Slopstones	4	19	34	34	53	62	57	21	12
,, Repair W.C.'s, Baths, Basins, and Lavatories	2	26	13	23	48	34	27	38	38
,, Repair Roofs of Dwelling-houses ..	108	129	131	214	182	181	108	169	56
,, Cleanse Backyards, Privies, & Passages ..	18	21	37	24	46	28	27	16	39
,, ,,, and Whitewash Filthy Dwellings	31	27	31	35	23	14	18	45	19
,, Provide Doors to Privies, Pail Closets, and Ashpits	170	239	252	283	385	298	278	301	459
,, Repair or Re-hang Doors to Pail Closets, Ashpits and Privies .. .. .. ..	..	141	120	157	299	259	96	712	370
,, Repair Privies and Ashpits	8	1	51	36	70	86	76	68	48
,, ,,, Eaves and Downspouts	75	134	101	98	124	75	75	103	67
,, Provide ,,, ,,,	42	22	50	37	41	32	50	51	244
,, Repair Pavement, etc., Backyards ..	69	128	267	240	371	298	224	197	218

Number of Sanitary Notices Served.	1896	1897	1898	1899	1900	1901	1902	1903	1904
To Repair Pavement & Floors in Dwelling-houses .. .. .. ..	..	..	..	47	69	73	61	20	34
,, Remove Fowls, Pigeons, etc., from Dwellings	12	6	16	7	6	3	4	3	—
,, Remove Pigs	28	17	6	21	31	21	19	9	12
,, „ Rubbish	18	15	29	35	48	24	7	3	9
,, „ Manure	17	24	6	18	16	20	18	8	10
,, Reconstruct Middensteads .. .. .. ..	..	..	..	11	26	11	25	6	
,, Clean Foul Ditches and Cesspools	14	22	25	106	45	41	43	21	9
,, Provide or Repair Ashboxes	340	32	54	715	170	116	165	719	786
,, Overcrowding	33	31	24	24	23	26	18	42	10
,, Replaster Walls or Ceilings of Dwellings .. ..	..	..	86	95	108	152	70	72	35
,, Prevent Dampness in Dwellings .. ..	..	..	..	..	25	57	53	13	29
,, Remove Sheds, etc., from Backyards .. ..	..	..	..	..	..	33	11	7	12
,, Remedy Defects in Bakehouses .. ..	..	10	8	4	2	4	24	40	6
,, „ Workshops .. ..	..	..	..	..	7	5	15	14	2
,, „ Cowsheds & Dairies	8	12	3	7	..	31	12	1	3
,, Provide Water Supply .. .. ..	..	..	..	18	9	13	14	11	16
,, Miscellaneous	215	164	122	207	175	164	156	84	101
Foul Ashpits to be Reconstructed to W.C.'s .. ..	..	218	92	227	135	87	102	160	71
Totals	1579	1895	2159	3714	3619	3394	2740	4144	3454

These notices were in the majority of cases fairly promptly complied with, but in others the utmost difficulty was found in getting the work done within a reasonable time, without having to resort to legal proceedings. To this latter class unfortunately belong certain house agents whose "forgetfulness" in this respect is a means of wasting much of the time of the department.

Drainage Inspector.—In addition to the inspection of Factories and Workshops the following is a summary of the work done during the year:—

New Drains.—590 new drains have been tested with the water test.

Of these 495 proved satisfactory on the 1st test.

88	„	„	„	2nd „
7	„	„	„	3rd „

The improvement in the laying of the drains will be noted, 82.2% being satisfactory on the first test, and only 0.12% requiring more than two tests.

Old Drains.—The smoke test has been applied to all the houses in the following streets:—Park Road, Prospect Road, Waine Street, Boardman's Lane, Black Horse Street, Latham Street, Spurgeon Street, Roper Street, Critchley Street, Merton Bank Road, Back Bolton Street, Bolton Street and Pitt Street.

The results were as follows :—

Total number of houses tested	...	...	...	484
Drains were found defective in	...	...	...	132
Gullies do. in	...	...	...	25
Total defects	...	...	...	157 or 32.4 per cent.

In 1903, 657 houses were tested, showing 42.1 of defects.

Women Inspectors.—The number of visits made in 1904 was 6,555. These inspections related chiefly to the hygiene of infancy and childhood, 2,009 births being visited, 425 cases of dirty children and houses dealt with, and 181 visits made to schools. In addition also 136 inspections and enquiries were made on account of deaths from Diarrhoea and cases of Puerperal Fever. A very large amount of work was also done in connection with the epidemic of Measles, 3,804 visits and re-inspections being made.

Staff. This consists of—

- Medical Officer of Health.
- Chief Inspector of Nuisances.
- Three District Inspectors of Nuisances.
- Drainage and Workshops Inspector.
- Veterinary Inspector.
- Two Women Sanitary Inspectors.
- Clerk.
- Laboratory Attendant.
- Two Disinfectors.

APPENDIX A.

The information contained in this Appendix is supplied by Mr. Geo. J. C. Broom, M.I.C.E., F.G.S., Borough Engineer.

CANAL BOATS ACT.

The following is a copy of the Annual Report of the Inspector under this Act to the Local Government Board :—

In compliance with Section 3 of the Canal Boats Act, 1884, I have to present to you my Annual Report as to the execution of the Canal Boats Acts, 1877 and 1884, for the year ending December 31st, 1904.

(1) The Corporation of St. Helens have appointed me to be Inspector under the Canal Boats Act, in addition to my duties as Borough Engineer. No special remuneration is made for my duties under the Canal Boats Acts.

(2) The number of boats inspected in 1904 was 13, against 21 in 1903.

(3) There were four infringements of the Acts and Regulations on four of the thirteen boats inspected.

Three boats contravened Article 9, part 4 of the Local Government Board Regulations of 1878, the cabins requiring re-painting. The other boat contravened Section 3, of the Canal Boats Act, 1877, the registered number not being marked on the boat.

Complaint notes were served in each case.

Certificates were received from Inspectors of other Registration Authorities, stating that the necessary work had been done in connection with two of the boats.

One boat was re-inspected here, and the owner of the other replied stating that the boat would no more be used a dwelling.

(4) No legal proceedings for infringements were taken during the year.

(5) No case of Infectious disease was discovered on any Canal Boat during the year, nor was any case reported to the Medical Officer of Health.

(6) No boats were detained for cleansing or disinfection.

(7) No boats are at present on the Register.

(8) No boats were registered during 1904.

The canal was visited 35 times for the afore mentioned number of Inspections.

I herewith append a table showing the foregoing facts.

I am, Gentlemen,

Your obedient servant,

GEO. J. C. BROOM,

Canal Boats Inspector for the County Borough of St. Helens, Registration Authority.

PLANS.

Plans Deposited and Approved by the Health Committee.

	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
For Dwelling-houses	310	253	310	329	386	284	293	370	677	626	353
,, Other Buildings	45	24	31	26	22	23	21	12	23	34	21
,, Alterations to Existing Buildings}	73	48	44	40	46	47	52	81	27	128	85
Total.....	428	325	385	395	454	354	366	463	727	788	459

The following Table shows the several Wards of the Borough in which Buildings have been erected during the years mentioned :--

Year.	Eccleston North	Eccleston South	Windle North	Windle South	Sutton, East	Sutton, West	Central	Hardshaw	Parr	Total
1896	15	63	57	12	6	36	—	12	43	244
1897	16	28	65	5	15	15	—	7	44	195
1898	40	28	99	14	40	15	—	48	40	324
1899	19	6	42	7	42	11	2	27	80	236
1900	38	56	28	11	16	9	—	21	85	264
1901	26	77	27	1	27	35	8	60	54	315
1902	20	53	14	1	72	11	5	29	54	259
1903	67	84	37	18	100	23	8	43	38	391
1904	105	53	37	16	59	1	7	47	70	395

STREETS.

Sewering, Levelling, Paving, Flagging, Channelling, and Completing.

Duncan-street.

Levelling, Macadamizing, Paving, Flagging, Channelling, and Completing.

Bishop-road, from Cowley Hill-lane to a point 34 yards north of Dentons Green-lane.

FOOTPATHS.

Paving, Flagging, Channelling, and Making Good.

Footpath, Nos. 173-187, City-road.

- ,, Nos. 189-243, , ,
- ,, City-road, from Seddon-street to Hard-lane.
- ,, Boundary-road, from Eccleston-street to Creswell-street.
- ,, Nos. 117-135, Merton Bank-road.
- ,, Hammond-street, from No. 25, Hammond-street to Gaskell-street.
- ,, Sherdley-road, late Ellbess-lane.
- ,, Robins-lane, from Marshalls Cross-road to No. 79, Robins-lane.
- ,, Nos. 127-143, Robins-lane.
- ,, Prescot-road, late Sandy-lane

PASSAGES.**Draining, Levelling, Paving, Channelling, and Completing.**

Passage, rear of Nos. 118-124, Harris-street, and Nos. 95-99, Dentons Green-lane.	
„ „ Nos. 124-144, Parr Stocks-road.	
„ „ Nos. 2-20, Fleet-lane.	
„ „ Nos. 22-40, „	

Sewering, Levelling, Paving, Channelling, and Completing.

Passage, rear of Nos. 86-94, Dentons Green-lane, and along gable of No. 69, Keswick-road.	
„ „ Nos. 146-174, Parr Stocks-road.	

SCAVENGING.

Number of Tub and Pail Closets at end of 1903	...	...	...	...	6971
Number Demolished during 1904	...	...	...	29)	
„ Converted to Water Closets, 1904	..	...	..	67)	96
Number at end of 1904	...	...	...	...	<u>6875</u>
Number of Old Ashpits at end of 1903	...	...	...	...	2423
Number Demolished during 1904	...	...	...	51)	
„ Converted to Water Closets	...	...	...	69)	120
Number at end of 1904	...	...	...	...	<u>2303</u>
Number of Water Closets at end of 1903	..	..	..	..	4136
Number of Tub and Pail Closets Converted during 1904	...	...	67)		
„ Old Ashpits	„	„	69)		531
„ New Houses built during 1904	...	...	395)		
Number at end of 1904	...	...	...	...	<u>4667</u>
Number of Closets on No. 2 System	...	...	...	...	81

It will thus be seen that 49.3 per cent. of the closets are on the Tub and Pail system, 16.5 per cent. are Privy Middens, and 33.5 per cent. Water Closets.

APPENDIX B.

In this Appendix is included the tables of vital statistics required by the Local Government Board.

TABLE I.

TABLE SHOWING CERTAIN MORTALITY STATISTICS IN THE COUNTY BOROUGH OF ST. HELENS FOR THE YEARS 1894—1904.

Year.	Population estimated to Middle of each year.	BIRTHS.		DEATHS UNDER ONE YEAR OF AGE.		DEATHS AT ALL AGES.		Deaths in Public Institutions.	Deaths of Non-Residents registered in District.	Deaths of Residents registered beyond District.	DEATHS AT ALL AGES.	
		Number.	Rate.*	Number.	Rate per 1000 Births registered.	Number.	Rate.*				Number.	Rate.*
1894 ..	77694	2882	37·0	466	161	1400	18·0	159	77	78	1401	18·0
1895 ..	79490	3165	39·8	576	181	1674	21·0	195	88	105	1691	21·2
1896 ..	81136	3042	37·4	542	177	1668	20·4	194	110	85	1643	20·2
1897 ..	82910	3193	38·5	578	181	1746	21·0	189	102	99	1743	21·0
1898 ..	84730	3262	38·4	566	172	1641	19·3	198	119	93	1615	19·0
1899 ..	86588	3115	35·9	492	157	1700	19·6	217	125	107	1682	19·4
1900 ..	88480	3100	35·0	584	188	1914	21·6	233	119	111	1906	21·5
1901 ..	84734	3128	36·9	550	175	1675	19·7	209	96	132	1711	20·1
1902 ..	86040	3222	37·4	541	167	1702	19·7	243	109	118	1711	19·8
1903 ..	87385	3421	39·14	475	138	1535	17·5	209	96	129	1568	17·9
Averages for years 1894-1903 }	83918	3153	37·54	537	169	1665	19·7	204	104	105	1667	19·7
1904	88722	3321	37·4	578	174	1788	20·1	160	66	137	1859	20·9

* Rates calculated per 1000 of estimated population.

Area of District in acres (exclusive of area covered by Water) .. 7284·427 Acres.

Total population at all ages 84,410

Number of inhabited houses 15,122

Average number of persons per house 5·58

At Census of 1901.

TABLE II.

TABLE SHOWING CERTAIN MORTALITY STATISTICS, CLASSIFIED ACCORDING TO WARDS, IN THE COUNTY BOROUGH OF ST. HELENS FOR THE YEARS 1894 TO 1904.

NAMES OF LOCALITIES.	YEAR.	NORTH ECCLESTON.			CENTRAL.			NORTH WINDLE.			SOUTH WINDLE.		
		Deaths under 1 year.	Deaths at all Ages.	Population estimated to middle of each Year.	Deaths under 1 year.	Deaths at all Ages.	Population estimated to middle of each Year.	Deaths under 1 year.	Deaths at all Ages.	Population estimated to middle of each Year.	Deaths under 1 year.	Deaths at all Ages.	Population estimated to middle of each Year.
1894	...	9286	165	74	7325	108	42	8321	125	50	8333	122	51
1895	...	9472	210	90	7739	114	44	8321	160	53	8747	161	64
1896	...	9579	187	88	8187	119	47	8321	170	50	9152	173	55
1897	...	9788	202	75	8366	140	53	8503	179	54	9352	180	58
1898	...	10003	218	95	8549	107	36	8690	138	48	9558	166	63
1899	...	10222	184	66	8736	128	45	8880	157	48	9768	147	39
1900	...	10453	227	91	8926	136	40	9073	179	56	9980	181	69
1901	...	10007	221	94	7958	150	64	9616	139	41	8755	161	56
1902	...	10840	209	87	9256	139	46	7130	144	57	11810	168	50
1903	...	11009	183	65	9400	143	50	7240	127	43	12002	145	51
		Averages of Years 1894 to 1903.											
1904	...	11178	265	99	9544	170	53	7350	117	39	12186	170	51
		Averages of Years 1894 to 1903.											
		10065			200			82			46		
								128			8444		
								151			50		
								117			39		
								170			51		
								12186			170		
								51			8568		
								190			190		
								67					

TABLE II.—CONTINUED.
TABLE SHOWING CERTAIN MORTALITY STATISTICS—CONTINUED.

TABLE III.

TABLE SHOWING NEW CASES OF INFECTIOUS SICKNESS, COMING TO THE KNOWLEDGE OF THE MEDICAL OFFICER OF HEALTH DURING THE YEAR 1904, IN THE ST. HELENS URBAN SANITARY DISTRICT, CLASSIFIED ACCORDING TO DISEASES, AGES, AND LOCALITIES.

Notifiable Disease.	Cases Notified in Whole District.										Total Cases Notified in Each Locality.										No. of Cases Removed to Hospital from Each Locality.										
	At All Ages.		Under 1.		1 to 5.		5 to 15.		15 to 25.		25 to 65.		65 and upwards.		Central.		North Eccles.		South Eccles.		North Wv Middle.		South Wv Middle.		Hardshaw.		East Sutton.		West Sutton.		Par.
Small-pox ..	34	2	..	2	11	19	..	3	11	7	4	1	2	..	6	3	11	7	4	1	2	6	
Cholera ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diphtheria ..	169	1	61	75	17	15	..	20	17	8	31	18	26	17	10	22	1	3	1	3	1	1	3	3	
Membranous Croup } ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Erysipelas ..	73	..	1	6	17	46	3	7	4	3	7	12	11	15	8	6	
Scarlet Fever ..	416	8	146	231	28	3	..	62	20	19	80	33	45	45	56	56	46	14	13	62	29	36	38	43	42	42	42	42			
Typhus Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Enteric Fever ..	61	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Relapsing Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Continued Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal Fever ..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Plague ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals ..	756	11	208	322	98	111	6	101	54	47	132	65	94	83	81	99	57	28	31	70	32	46	42	49	57	57	57	57			

TABLE IV.

CAUSES OF, AND AGES AT, DEATH DURING YEAR 1904.

Table V.
AGE CONSTITUTION OF THE POPULATION.

AGES.	CENSUS, 1891, Old Borough Area.	CENSUS, 1901, Extended Borough.	Estimated Population at each Age in the Extended Borough. 1904.
Under 1 year	2398	2611	2747
1 to 2 years	2143	2397	2512
2 „ 3 „	2140	2380	2504
3 „ 4 „	2068	2358	2481
4 „ 5 „	1967	2324	2445
 Total under 5 years	10716	12070	12689
 5 to 10 years	9221	10884	11465
10 „ 15 „	8334	9727	10246
15 „ 20 „	7441	8546	9003
20 „ 25 „	6582	7961	8148
25 „ 30 „	6023	7274	7667
30 „ 35 „	5129	6047	6377
35 „ 40 „	4465	5257	5547
40 „ 45 „	3674	4451	4699
45 „ 50 „	2685	3688	3897
50 „ 55 „	2434	2860	3026
55 „ 60 „	1620	1999	2110
60 „ 65 „	1407	1679	1773
65 „ 70 „	763	998	1057
70 „ 75 „	461	590	630
75 „ 80 „	227	249	270
80 „ 85 „	83	99	104
85 „ 90 „	19	23	24
90 „ 95 „	4	5	5
95 „ 100 „	—	3	3
 71288	84410	88740	

TABLE VI.—Deaths Registered in the St. Helens Urban Sanit

CAUSE OF DEATH.	WEEKS.													Total for 1st Quarter.	WEEKS.											
	1	2	3	4	5	6	7	8	9	10	11	12	13		14	15	16	17	18	19	20	21	22	23		
Small Pox	
Measles	1	1	..	2	4	6	8	5	27	8	5	11	2	5	1	1	1	3	2
Scarlet Fever	2	..	..	..	..	..	..	..	1	..	1	..	..	..
Typhus Fever	
Whooping Cough	2	1	..	3	..	..	2	4	1	4	..	17	..	1	1	1	2	..	..	2	..	..
Diphtheria	1	..	3	2	..	..	1	..	1	1	..	2	..	12	..	1	..	1	..	1	..	1	..	
Simple or Continued Fever	
Enteric Fever	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Influenza	1	..	2	1	1	..	..	..	..	5	..	1	..	1	..	..	1	3	
Other Zymotics	
Simple Cholera	
Diarrhœa	1	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..
Dysentery	
Remittent Fever and Ague	
Hydrophobia, Anthrax, &c.	
Syphilis, &c.	
Erysipelas	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Pyæmia, &c.	
Puerperal Fever	
Thrush, &c.	1	..	..
Want of Breast Milk	
Scurvy	1	
Chronic Alcoholism	1	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	1	
Rheumatic Fever	1	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..
Gout	
Ricketts	1	..	1	
Cancer, &c.	1	2	..	2	1	2	1	..	..	..	..	..	9	..	1	1	..	..	1	3	3	
Tabes Mesenterica	1	..	1	..	1	..	1	..	2	..	..	..	..	..	7	..	2	..	..	1	..	1	..	
Tubercular Meningitis	1	..	1	..	..	..	1	..	..	1	..	..	..	..	4	..	1	1	..	..	..	..	..
Hydrocephalus	
Phthisis	2	4	1	2	2	1	3	4	2	5	3	1	4	..	34	..	8	..	3	2	1	6	5	
Scrophula	1	..	..	..	..	..	..	..	..
Anæmia, Diabetes, &c.	1	..	..	1	1	..	1	..	..	4	..	1	..	..	..	..	..	..
Premature Birth, &c.	1	..	3	..	..	..	5	2	1	2	2	3	1	..	20	..	1	..	3	4	2	1	1	
Old Age	2	2	3	1	1	3	2	2	2	1	1	1	1	..	19	..	..	2	2	..	2	..	11	
Diseases of Nervous System ..	4	3	..	1	2	3	2	4	3	2	1	2	1	2	1	..	28	..	2	..	4	2	1	1	3	
Convulsions	1	2	1	..	1	1	..	4	..	..	..	..	..	..	12	..	4	2	..	3	1	1	1	
Eye, Ear, and Nose	
Laryngitis, Croup, &c.	2	..	2	..	..	1	..	..	..	..	..	1	1	4	11	..	1	..	..	1	1	..	1	
Bronchitis	8	3	5	4	7	1	5	7	5	3	6	4	10	..	68	..	6	3	5	6	5	4	3	
Pneumonia	5	5	4	..	1	2	3	3	7	2	3	3	2	..	40	..	4	3	4	1	2	1	4	
Pleurisy	1	1	..	1	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..
Heart and Blood Vessels	1	2	..	2	2	1	1	2	4	3	4	4	..	..	..	26	..	2	4	..	2	7	1	2	
Dentition	2	1	..	..	..	..	..	1	1	1	2	..	..	..	8	..	..	..	..	1	1	..	1	
Diseases of Digestive System ..	3	3	2	2	1	3	3	2	4	..	..	1	1	..	..	..	25	..	2	2	1	3	2	2	1
Lymphatics and other Glands	
Urinary System	1	..	2	..	..	3	1	2	..	..	1	1	..	..	11	..	1	1	..	..	..	..	1	
Generative Organs	
Abortion or Childbirth	2	..	1	..	..	1	1	..	..
Diseases of Bones	1	
Diseases of Skin	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Accidental Violence	1	..	4	1	..	2	1	5	1	2	..	..	..	..	1	..	1	1	2	..	..	..	..
Homicidal Violence ..	..</td																								

Table VII.

MORTALITY STATISTICS FOR EACH WARD AT VARIOUS AGES.

DISEASES.	AGES AT DEATH.												WARDS.															
	0	3	6	1	2	3	4	5	10	15	20	25	35	45	55	65	75	85	95	105	115	125	135	145				
to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to			
Zymotic Diseases																												
(a) MIASMATIC DISEASES																												
Small Pox		
Measles		
Scarlet Fever		
Typhus Fever		
Whooping Cough		
Diphtheria		
Simple, Continued, or Ill-defined Fever		
Enteric Fever		
Influenza		
Other Miasmatic Diseases		
(b) DIARRHEAL DISEASES																												
Simple Cholera		
Diarrhoea		
Dysentery		
(c) MALARIAL DISEASES																												
Remittent Fever		
Ague		
(d) ZOOGENOUS DISEASES																												
Cow Pox and Effects of Vaccination		
Hydrocephobia, Glanders, & Splenic Fever		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28

DISEASES.	AGES AT DEATH.												WARDS.																												
	0 to 3 ms	3 to 6 ms	6 to 12 ms	12 to 2 ms	2 to 3 ms	3 to 4 ms	4 to 5 ms	5 to 10 ms	10 to 15 ms	15 to 20 ms	20 to 25 ms	25 to 30 yrs	30 to 35 yrs	35 to 40 yrs	40 to 45 yrs	45 to 50 yrs	50 to 55 yrs	55 to 60 yrs	60 to 65 yrs	65 to 70 yrs	70 to 75 yrs	75 to 80 yrs	80 to 85 yrs	85 years.	Whole Borough	Part	Button East	Button West	Harshaw	South	North	Central	Eccllesation North	Eccllesation South	Ward North	Ward South	Harshaw	East	West	Button	Part
(i) DISEASES OF REPRODUCTION SYSTEM											
Of Male Organs											
Of Female Organs											
Abortion and Miscarriage											
Puerperal Convulsions											
Placenta Praevia											
Accidents of Childbirth											
(k) DISEASES OF BONES AND JOINTS											
Caries and Necrosis											
Arthritis, Ostitis, Periostitis											
Other Diseases of Bones and Joints											
(l) DISEASES OF INTEGRUMENTS											
Carbuncle, Phlegmon											
Other Diseases of Integumentary System											
Deaths from violence																																									
(a) ACCIDENT OR NEGLIGENCE											
Fractures and Contusions											
Gunshot Wounds											
Cuts or Stabs											
Burns or Scalds											
Poison											
Drowning											
Suffocation (Gassed)											
Otherwise											
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28													

